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ABSTRACT

The report describes the procedures followed in identifying and analyzing social incentives which might be used in Air Force technical training. Questionnaire techniques were used to scale a list of 62 potential incentives for attractiveness, feasibility, and other characteristics. Personal motives, background variables, and ambiguous surface structure ones with ambiguous underlying structure, and ones considered social incentives from the original list were redesignated as social behaviors which should be encouraged in training environments to enhance performance. On the basis of the questionnaire and administrative assessments of feasibility data, 18 additional incentives (both social and non-social) were proposed for use in a field experimental situation. Almost half the document consists of 13 appendixes which include: the questionnaire forms used; scatterplots, agreement correlations, and factor analyses of the data; results of a supplementary survey; examples of leadership behavior incentives; and assessments of rating forms. (Author/JR)

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AIR FORCE HUMAN RESOURCES LABORATORY

IDENTIFICATION AND ANALYSIS OF SOCIAL INCENTIVES IN AIR FORCE TECHNICAL TRAINING

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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October 1975
Interim Report for Period June 1972 – August 1975

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MARTY R. ROCKWAY, Technical Director
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This report describes the procedures followed in identifying and analyzing social incentives which might be used in Air Force technical training. Questionnaire techniques were used to scale potential incentives for attractiveness, feasibility and other characteristics. Personal motives, background variables, and leadership climate factors were found to be related to attractiveness ratings. Six social incentives from the original list were redesignated as social behaviors which should be encouraged in training environments to enhance performance. On the basis of the questionnaire and administrative assessments of feasibility data, 18 additional incentives (both social and non-social) were proposed for use in a field experimental situation.

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SUMMARY

Problem

While the overall goal of the research was to develop and evaluate an incentive system which used social incentives in Air Force technical training, the present phase was concerned with identifying such incentives and examining them for feasibility, attractiveness and other characteristics. By social incentives is meant reinforcement which arises from personal interaction (e.g. esteem, recognition and approval), as distinguished from tangible incentives (e.g. time off, financial benefits, etc.).

Approach

A preliminary list of 62 incentives was generated by interview, literature search, and group deliberation. Questionnaires were then administered to 463 trainees and 102 instructors throughout the Air Training Command. Respondents were asked to make judgments about the incentives with regard to attractiveness, feasibility, and whether the incentives were contingent on performance or could be made contingent. Information was also gathered on personal motives, background variables, and leadership climate in the training environment. Attractiveness ratings were factor analyzed and other relationships in the data were explored by correlational methods. Two methods of scaling the attractiveness of incentives were compared.

Results and Conclusions

The more attractive incentives were found to be those with direct impact on the trainee himself, and they were generally either costly or relatively low in administrative feasibility. With small sets of incentives (10 or less) the assignment of dollar values to the incentives was found to be a plausible measurement technique.

Factor analysis showed that recognition was the most important dimension in the present set of incentives with secondary dimensions of personal freedom, self development, social behaviors and information feedback.

Sex, race, marital status, personal motives, and perceived leadership climate were related to the reported attractiveness of certain incentives. Females rated as more attractive incentives which allowed for social interaction. Blacks preferred recognition-oriented incentives more than whites. Personal motives - recognition, power, affiliation, altruism - generally tended to be associated with those incentives which made satisfaction of the motive possible.

Feasibility judgments varied across incentives with the majority being viewed as somewhat feasible. Instructor-student agreement on incentive feasibility was quite high.

Four experimental incentive systems were proposed. These systems included as reinforcers 18 of the 62 incentives originally considered. Many were dropped for low feasibility, low attractiveness, or both. Six other incentives from the original list were redesignated as social behaviors (e.g. showing concern for others; being treated as an individual) since it was not possible to make them contingent on performance. However, these behaviors were to be fostered and encouraged by being targets of the incentive system in the expectation that the growth of social skill would provide a bettern learning environment.

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IDENTIFICATION AND ANALYSIS OF SOCIAL INCENTIVES IN AIR FORCE TECHNICAL TRAINING

Research Objectives

The principal goal of the present research was to develop and experimentally implement and evaluate a system of social incentives conducive to effective learning and adjustment in the Air Force technical training environment. This report details the activities and results of the first phase of the empirical research, which was concerned with the identification and analysis of incentives for potential use in a training reward system. Prerequisites for the effective administration of an incentive system include the selection of incentives which are psychologically meaningful rewards for participants and feasible for the training command to administer, and establishing contingencies between training effectiveness and the availability of rewards.

Incentive Identification

A combination of information sources was used to develop a preliminary set of potential incentives, which were later subjected to more refined measurement and scaling. These sources were as follows:

(1) A thorough review of the previous literature on social reinforcement and conclusions derived from that theoretical analysis (Raben, Wood, Klimoski and Hakel, 1973).

(2) Examination of incentives previously applied to learning and performance in military settings (Datel and Legters, 1970; Pritchard, Von Bergen and DeLeo, 1974).

(3) Interviews and discussions with technical trainees, technical instructors, course supervisors, and training research personnel at Lowry Air Force Base.

(4) Group deliberations by members of the research team, wherein new incentives were elicited and previously identified incentives were clarified and defined, and redundant incentives were eliminated.

The sixty-two potential incentives derived from these activities are reproduced in Table 1. These incentives represent a mixture of incentives which might or might not affect behavior through a social reinforcement process. While the incentives were not intended to fit a theoretical model, many were derived from our preliminary conceptualization of the nature or types of social incentives. Under the assumption that social incentives operate to fulfill social motives, categories of possible incentives included: (a) recognition and approval, (b) affiliation and identification, (c) social influence, and (d) altruism, or helping others. Table 1 indicates the categories associated with each of the preliminary incentives, as well as notation of its previous experimental application or investigation. This conceptual scheme and list of incentives provided the basis for objective measurement of incentive characteristics and their subsequent selection for evaluation in classroom incentive systems.

Table 1

Original 62 Incentives Examined in Air Force Technical Training

	Incentive	Social Category Ai	I	Af	R	Previous Citation
1.	Verbal praise				x	RWKH, DL
2.	Choice of permanent base assignment		x			DL
3.	Opportunity to cross-train		x			
4.	College credit for technical training		x		x	
5.	Coed classes			x		
6.	Time off		x	x		DL, RWKH, PVBD
7.	Progressing through course at own pace		x			RWKH
8.	Interaction with instructor during class			x		
9.	Reduced squadron detail		x			PVBD
10.	Freedom from instructor's supervision		x			
11.	Being in honor dormitory				x	
12.	Being able to help classmates learn material	x				
13.	Smoking and drinking coffee and pop in class when possible					DL
14.	Ribbon for outstanding performance				x	
15.	Wearing civilian clothes to class		x	x		DL, PD
16.	Press release to hometown newspaper				x	DL
17.	Relaxation of curfew restrictions		x	x		
18.	Extra advanced instruction					DL
19.	Pictures and names of honor students posted				x	
20.	Additional information concerning related civilian occupations					
21.	Display of completed work				x	
22.	Special seating in classroom			x	x	
23.	Freedom from classroom exercises		x			
24.	Being able to evaluate your own performance		x			
25.	Receiving encouragement					RWKH
26.	Choice of roommates			x		
27.	Being recommended				x	

Table 1 continued

	Incentive	Social Category Al	I	Af	R	Previous Citation
28.	Being able to set learning goals		x			
29.	Being treated as an individual			x	x	
30.	Sending letter of merit to parents or loved ones			x	x	DL, PVBD
31.	Being taken to some social event during duty time			x		DL
32.	Being chosen as group spokesman	x			x	
33.	Promotions				x	
34.	Certificates or diplomas				x	RWKH
35.	Eliminating involuntary cross-training		x			
36.	Being excused from classroom training based on exams					PVBD
37.	Letter of commendation in permanent records					DL, PVBD
38.	Being in a classroom with students of the same rank		x	x		
39.	Free telephone calls home			x		
40.	Additional information concerning military assignments					
41.	Field trips to location of training specialty					
42.	Identity of honor students passed on to next block				x	
43.	Early notification of permanent base assignments		x			
44.	Party for top performers			x		
45.	Influence over class routine		x			
46.	Eliminating numerical or letter grades and having pass-fail		x			
47.	Having your suggestions implemented	x	x			
48.	Receiving more difficult and challenging work					
49.	Press releases to base newspapers				x	DL
50.	Pictures and names of most improved students posted				x	
51.	Specific information about your strengths and weaknesses					
52.	Receiving an explanation for orders					
53.	Being recognized for achievements					
54.	Being liked and accepted			x		
55.	Choice of dormitory					DL

Table 1 continued

	Incentive	Social Category Al	I	Af	R	Previous Citation
56.	Being able to help the instructor	x				
57.	Social interaction	x		x		RWKH
58.	Being concerned for			x		
59.	Not failing					
60.	Being recommended for a "rope"				x	
61.	Being allowed to take meals at NCO club			x		DL
62.	Being able to teach a class	x	x			DL

Note: The first four column heads denote altruism, influence, affiliation, and recognition, respectively. The abbreviated citations refer to: Raben, Wood, Klimoski, and Hakel, 1973; Datel and Legters, 1970; and Pritchard, Von Bergen and DeLeo, 1974.

Measurement of Incentive Properties

Questionnaire methods were used to assess multiple characteristics of the incentives previously identified. This section of the report describes the variables examined, methods of measurement, and data-collection procedures.

Incentive Attractiveness

The central parameter of the incentives investigated was that of their psychological reward value to members of the population who might potentially receive the incentives for effective performance. This parameter has recently been highlighted by expectancy theories of human motivation, which suggest that: (a) one's affective response toward a training program will depend on the perceived value of the incentives and the extent to which the training system is instrumental for attaining the incentives; and (b) effort to improve one's training effectiveness will depend on the value of effectiveness and the expectancy that effort will produce effectiveness (Vroom, 1964; Lawler, 1971). More generally, the subjective expected utility of an action (e.g., by the trainee) depends on the consequences of the act (reinforcement) and the value of those consequences to the individual. An underlying assumption is that an incentive system will be effective to the extent, in part, that trainees receive rewards which are valued by them.

Incentive value was operationally assessed with two measures of the perceived attractiveness of each of the 62 incentives. Dual methods were employed to examine consistency of attractiveness judgments, or convergence of multiple methods in tapping the same concept. The strength of inference possible from the results is enhanced by the degree of equivalence of measurement and the interval scale properties of the derived data.

The first assessment method, which will be referred to as the "rating" method, involved respondents' judgments of the attractiveness of each incentive, independent of other incentives, on 7-interval attractiveness ratings scales. The scales provided descriptive verbal statements for each interval as follows: extremely attractive, very attractive, somewhat attractive, neither attractive nor unattractive, somewhat unattractive, very unattractive, and extremely unattractive. Respondents indicated which interval described their perception of each incentive. The instructions also attached behavioral implications to the attractiveness judgments. For example, part of the instructions stated: "An x in the extreme left space means: 'This outcome is extremely attractive to me; I would expend my maximum effort to obtain this'." Incentives were not designated as such, but were presented as "possible outcomes of performing well in training." Complete instructions and rating scales for this attractiveness assessment task are presented as Part 1 of Appendices A and B.

The second measurement method, which will be referred to as the "dollar" method, implicitly involved comparisons of the relative values of different incentives. Respondents were provided with a hypothetical sum of money with which to "purchase" from the list of incentives. This distributive scaling method derives from Nealey's (1964) work with game-board and paired comparison scaling techniques for measuring wage and fringe benefit preferences in business and industry. The method generates ratio scaling properties (absolute zero is meaningful in dollar units), with mean dollar values allotted to an incentive denoting its attractiveness. In this study, respondents distributed the sum of $300, or about a month's salary for trainees, among the same incentives they had rated with the other method. The list of incentives was given to them in an order which differed from the order in which they were presented in the rating method. Instructions indicated any whole number of dollars (0-300) could be assigned to any given outcome (incentive), so long as the total spent was $300. Complete instructions and the dollar method form are shown as Part II of Appendices A and B.

The rating method was also applied in another questionnaire, to a limited set of incentives, for which attractiveness might vary with the agent of incentive administration. As indicated in the review of the social reinforcement literature (Raben et al., 1973), various agents may function as "significant others" relative to the recipient of a reward, such that a given incentive may take on different reward values dependent on the referent person or group from whom the incentive emanates or by whom it is esteemed. In this study, we examined differential attractiveness of incentives delivered through instructor reinforcement and peer reinforcement. Twenty of the 62 incentives were rated on the 7-interval attractiveness scales. Respondents placed an I in the interval that best described the attractiveness of each incentive if administered to them by their training instructor, and a C in the (same or different) interval describing incentive attractiveness when administered by their class as a group. This attractiveness rating sheet is shown as Part V of Appendices A and B.

Incentive Feasibility

Perceptions of the feasibility of administering incentives contingent on training effectiveness were measured by two questionnaire rating forms. First, respondents indicated, on five-interval scales for each incentive, the extent to which they believed the incentive (outcomes) presently depends on performing effectively. Response intervals ranged from "Being effective makes it impossible to obtain this outcome," to "Being effective makes the attainment of this outcome a sure thing." Intermediate categories stated that effectiveness "makes it difficult," "has nothing to do with," or "makes it easy" to attain the outcome. These response categories were intended to represent varying instrumentality relationships between effectiveness and rewards, with the intervals roughly approximating perceived effectiveness-reward correlations of -1.00, -.50, .00, .50, and +1.00. The second measure was similar in format, but assessed perceived future feasibility by asking for the

degree of belief that each incentive could be made to depend on effective performance. Response alternatives were, "There is no chance," "There is a small chance," "The chances are 50-50," "There is a strong chance," "It is certain that...this outcome could be made dependent on effectiveness." The five intervals were constructed to correspond to subjective probability estimates of .00, .25, .50, .75, and 1.00. The instructions did not specify any bases for feasibility judgments; rather the resulting overall feasibility perceptions could reflect both ease of manipulating an incentive and tying its attainment to performance. The present and future feasibility questionnaires are included as Parts III and IV of Appendices A and B. An additional feasibility estimate was obtained on a screened and reduced set of incentives and will be reported later.

Organizational Variables

Measures were made of several variables associated with the training environment and participants, for the purpose of examining correlates of incentive attractiveness and feasibility. The environmental variables examined were types of training program and leadership climate in the classroom. The training program measures consisted of questions included in a personal background questionnaire (Part VIII, Appendices A and B), asking for the name of one's training course, the block in which he was currently operative, and his technical specialty area (AFSC).

Leadership climate was measured with the Instructor Behavior Description Questionnaire. This instrument was an adaptation (for this study) of the short-form of the Leader Behavior Description Questionnaire (LBDQ) (Stogdill and Coons, 1957). Changes in the standardized LBDQ involved minor rewording to place items in the context of the classroom with instructor and student referents, rather than the more general leader-employee context. The questionnaire contained 24 statements of instructor behavior. Students described the frequency of occurrence of each behavior with one of five response alternatives: always, often, occasionally, seldom, or never. They responded to each statement by circling A, B, C, D, or E which their instructions denoted as referring to the five frequency categories. The IBDQ is presented as Part VI of Appendices A and B. Two scores were derived from the responses. Each item was scored 1 (Never) to 5 (Always). The sum of scores for the odd-numbered items provided an index of instructor Consideration; items 11, 19, and 21 were "reverse-scored" since less frequently engaging in those behaviors reflects higher consideration. The sum of scores on the even-numbered items was an Initiating Structure score, indicating the extent to which instructors initiated structuring activities in the class. These dimensions have been related in previous leadership research to work behaviors such as turnover, absenteeism, and grievance rates (Korman, 1966).

Individual Variables

Respondents who assessed incentive characteristics also provided information about themselves. A background information sheet provided biographical data on the following variables: sex, race, age, military rank, Air Force experience, marital status, dependents, education, and military honors. Response categories for the education item were: high school, some college, college degree, and graduate degree with spaces to indicate the academic fields in which degrees were obtained. With regard to Air Force experience, respondents indicated: number of years in the Air Force, regular service branch, whether they had volunteered for their current training specialty, their ideal specialty in which they would like to be enrolled, and previous training specialty experience. The specific questions are reproduced in Part VIII of Appendices A and B.

Additional individual psychological characteristics were measured with the Personal Values Questionnaire (PVQ) (Wood, 1970). This instrument measured the relative strength of four individual motive dimensions: power, affiliation, altruism, and recognition. The form consisted of nine tetrads of statements expressing potentially valued general outcomes in life. Within each tetrad there were four statements, one representing each dimension, to be rank-ordered in terms of their attractiveness. Across the questionnaire there were three statements for each dimension arranged in the nine items, such that each statement appeared once and only once with each of the statements representing other dimensions. Sums of ranks attributed to each of the three power statements each of the three times it appeared in a tetrad comprised the total power motive score. The other three motive scores were similarly derived. For evidence concerning the development, reliability, and previous use of the PVQ, see Wood (1970, ch. 3; 1972). The PVQ form used in this study is included in Appendices A and B as Part VII.

Data Collection

The measuring instruments described in previous sections were administered to Air Force personnel in the form of a comprehensive survey of attitudes and opinions concerning technical training. The survey questionnaires were prepared in four forms. Two forms were constructed for trainee responses, and two forms were administered to technical instructors.

The trainee survey, forms A and B, consisted of the following measures, in the order presented here: I. Incentive attractiveness-rating method; II. Incentive attractiveness-dollar method; III. Incentive contingency-present; IV. Incentive feasibility-future; V. Incentive attractiveness-instructor and peer agents; VI. Instructor Behavior Description Questionnaire; VII. Personal Values Questionnaire; and VIII. Personal background information. The entire survey questionnaires for trainees are included in this report as Appendices A and B.

The instructor survey, forms A and B, consisted of three parts, in the following order: I. Incentive feasibility-future (equivalent of Part IV of trainee surveys); II. Instructor Opinion Questionnaire (IOQ); and III. Personal background information. The IOQ was included to examine relationships of instructors' perceptions of ideal classroom behaviors to their judgments of incentive feasibility and to trainees' descriptions of actual instructor behaviors. The items and response options for the IOQ were equivalent to those of the IBDQ completed by trainees. However, instructors were asked to indicate the frequency with which they thought they should ideally engage in each of the behaviors in the training setting. Consideration and Initiating Structure scores from the IOQ reflect the leadership style of the instructor. The personal background form for instructors was similar to that for trainees, except that instructors also indicated their military/civilian status. The instructor survey questionnaires comprise Appendices C and D of this report.

The necessity for two forms of the survey questionnaire for trainees, and two forms for instructors, was dictated by the number of incentives to be considered by the respondent. To facilitate comprehension and efficient time use, 32 incentives were presented in Form A of the student and instructor surveys, and the remaining 30 were presented in Form B of questionnaires administered to both respondent groups. The differentiation of questionnaire forms was solely on the basis of incentive content. Approximately half of the respondents at each level received each form. Incentives were distributed among forms A and B in a systematic manner so as to maintain approximate equivalence of content, or nature of the incentives a priori determined by incentive categorization (see Table 1), across the two forms. Each survey questionnaire was prefaced by a cover sheet, which introduced the sponsorship and the nature and intent of the research in general terms, and provided general instructions. Separate detailed instructions for the completion of each part of the questionnaire were included with each instrument in the booklet.

The questionnaires were administered to 402 trainees and 64 training instructors in various technical training programs at four United States Air Force Bases during August and September of 1972. The bases involved were: (1) Lackland - N = 138 trainees, 28 instructors; (2) Sheppard - N = 60 trainees, 11 instructors; (3) Chanute - N = 106 trainees, 13 instructors; and (4) Keesler - N = 98 trainees, 12 instructors. Additional characteristics of the sample are described in the results section of this report.

At each location, questionnaires were administered by one or two members of the research team to groups of trainees/instructors, who were brought together in a central room during their duty-day for the expressed purpose of completing the surveys. The researchers briefly introduced the project to the group, then administered the survey in a stepwise fashion by reading instructions to the group for a given part, allowing them to complete that part, then moving on to the next part.

Administration time was one hour for trainee groups and 20 minutes for instructors (though no rigid time limits were imposed). Individual respondents were anonymous. Following the administration period, the researchers entertained questions and comments from the participants.

Results of Incentive Analysis

Characteristics of the Sample

A summary of the major characteristics of the sample, in the form of distribution of respondents across categories of personal variables, is presented in Table 2. The trainee sample consisted predominantly of white, single airmen with less than six months in the Air Force, who had volunteered for their training specialty, and had a high school or some college education. Their average age was 19, with a standard deviation of about two years. The few college degrees represented in the sample were distributed across diverse fields, including engineering, business, psychology, social science, physics, criminology, history, and physical education. Individual differences on these characteristics will be re-examined later as they relate to incentive questionnaire responses.

Table 2

Characteristics of the Survey Respondents:
Air Force Technical Trainees

Variable:	Category	Number of Respondents	Percentage of Total Sample
Sex:	Male	357	89
	Female	45	11
Race:	White	358	89
	Black	44	11
Rank:	Airman	382	95
	Sergeant	12	3
Experience:	< 6 months	322	80
	> 6 months	80	20
Training status:	Volunteer	320	81
	Nonvolunteer	80	19
Marital status:	Single	342	85
	Married	56	14
	Divorced	4	1
Education:	High school	269	67
	Some college	113	28
	College degree	16	4

Note: Some categorizations do not total 402 because of missing responses or responses which did not fit the given categories.

Additionally, 36 of the trainees were "ropes," a military honors designation carrying leadership responsibilities within the airman squadron, though not necessarily relevant to technical school performance or activities. Other honors reported by very few trainees included ribbons, ROTC awards, stripes, and dorm leaders. Although trainees were sampled from more than 70 technical training specialties, a large portion (N = 70) were being trained in electronics-related fields. Other training specialties heavily represented in the sample included: law enforcement and security police, munitions, aircraft maintenance, and photography. Both traditional lock-step and self-paced courses were included in the sample.

Incentive Attractiveness

Table 3 reports the trainees' perceptions of the attractiveness of each of the original 62 incentives. Means and standard deviations are presented for both the rating-scale and dollar-method judgments. With the rating method, the possible range of scores was from 1 (extremely unattractive), through a neutral point of 4, to 7 (extremely attractive). The grand mean across incentives on Form A was 5.44, with a standard deviation of 1.36 (N = 32 incentives, 212 respondents). For the incentives on Form B, the mean was 5.13, with the standard deviation = 1.39 (N = 190). Attractiveness scores on the dollar distribution task ranged from $0 to $300, with the expected values for any given incentive being $9.38 (Form A) and $10.00 (Form B).

In the independent rating task, only one incentive was perceived as unattractive, as all other means were greater than 4.00. The most attractive incentives, with mean ratings in the 6 (very attractive) to 7 (extremely attractive) range, were: choice of base assignment (6.46), college credit for training (6.43), time off (6.37), being treated as an individual (6.37), free phone calls (6.21), reduced squadron detail (6.09), promotions (6.08), early notification of base assignment (6.07), information about training-related civilian occupations (6.02), and coeducational classes (6.00). The least attractive incentives, with mean ratings of 4 (neutral) to 4.5 were: special classroom seating (3.51), recommendation for rope (4.18), teaching a class (4.26), more difficult and challenging work (4.33), pass-fail grades (4.30), meals at NCO club (4.43), posting names and pictures of most improved students (4.42), honor student identity passed on to next instructor (4.51), freedom from classroom exercises (4.45), press release to base paper (4.58), being chosen group spokesman (4.53), and part for top performers (4.29).

The comparative dollar distribution preferences showed the following incentives to be the most attractive or valued: promotions (mean = 64.61), choice of base assignment (56.75), college credit (35.13), free phone calls (32.16), time off (27.22), being treated as an individual (23.47), not failing (21.23), early notification of base assignment (19.14); while the least attractive were: special classroom seating (0.98), display of completed work (1.59), posting pictures and names of

Table 3

Incentive Attractiveness: Means and Standard Deviations for Total Samples

Form	Incentive	Rating Method M	Rating Method sd	Dollar Method M	Dollar Method sd
A	Choice of permanent base assignment	6.46	0.96	56.75	56.29
A	College credit for technical training	6.43	1.11	35.13	44.05
A	Time off	6.37	1.01	27.22	53.35
A	Treated as an individual	6.37	1.03	23.47	43.53
B	Free phone calls home	6.21	1.22	32.16	43.27
A	Reduced squadron detail	6.09	1.36	15.65	29.17
B	Promotion	6.08	1.27	64.61	63.52
B	Early notification of base assignment	6.07	1.20	19.14	58.96
A	Information, civilian jobs	6.02	1.13	9.26	18.45
A	Coed classes	6.00	1.30	11.00	22.89
A	Choice of roommates	5.93	1.29	9.10	18.67
B	Not failing	5.92	1.47	21.23	36.08
B	Information, military assignments	5.89	1.25	16.46	30.76
A	Ribbon for outstanding performance	5.83	1.22	8.15	16.06
A	Opportunity to cross-train	5.78	1.20	15.03	26.11
A	Relaxation of curfew restrictions	5.77	1.35	5.18	18.42
A	Advanced instruction	5.75	1.16	13.68	69.92
B	Explanation for orders	5.75	1.26	10.46	17.50
A	Receiving encouragement	5.75	1.18	5.75	9.90
B	Choice of dorm	5.75	1.36	10.38	16.17
A	Progressing at own pace in course	5.71	1.41	11.07	25.56
B	Being liked and accepted	5.68	1.32	7.59	12.95
B	Letter of commendation	5.66	1.39	11.11	19.13
A	Letter of merit to loved ones	5.65	1.42	6.82	12.99
A	Set learning goals	5.59	1.32	7.67	24.27
A	Help classmates learn materials	5.50	1.38	6.57	10.70
B	Certificates or diplomas	5.50	1.28	11.75	18.99

Table 3 continued

Form	Incentive	Rating Method M	Rating Method sd	Dollar Method M	Dollar Method sd
A	Interaction with instructor	5.49	1.20	3.57	11.63
B	Recognition for achievements	5.48	1.35	6.32	11.54
A	Smoking, drinking in class	5.36	1.74	10.66	21.45
B	Have suggestions implemented	5.35	1.14	8.77	38.61
B	Information, strengths/weaknesses	5.34	1.42	16.04	55.34
B	Field trips	5.32	1.35	9.23	19.33
B	Being concerned for	5.29	1.29	4.49	11.54
B	Social interaction	5.21	1.13	5.44	12.40
A	Press release, hometown paper	5.18	1.46	3.91	10.10
A	Wearing civilian clothes to class	5.17	1.81	10.53	20.38
B	Eliminating involuntary cross-training	5.15	1.73	9.25	16.61
B	Excused by exam from class	5.15	1.48	9.31	38.41
A	Verbal praise	5.10	1.18	5.39	13.26
A	Social event during duty time	5.07	1.53	4.07	9.59
A	Evaluate own performance	4.98	1.48	4.50	12.53
	Honor dorm	4.97	1.55	3.44	8.02
B	Help instructor	4.96	1.29	3.02	5.87
A	Pictures of honor students posted	4.92	1.45	1.96	5.51
A	Freedom from supervision	4.90	1.66	3.66	15.29
B	Influence over class routine	4.88	1.24	8.42	55.66
A	Recommended as future instructor	4.85	1.77	5.77	14.87
B	Same-rank students in class	4.67	1.27	3.17	9.85
A	Display of completed work	4.61	1.30	1.59	5.20
B	Press release, base paper	4.58	1.42	5.39	35.18
A	Group spokesman	4.53	1.60	2.50	6.84
B	Identity of honor students passed on	4.51	1.63	3.62	20.97
A	Freedom from class exercises	4.45	1.43	3.46	9.36
B	Meals at NCO club	4.43	1.49	3.35	12.38
B	Pictures of most improved posted	4.42	1.40	6.13	56.15
B	Difficult, challenging work	4.33	1.45	10.56	58.39

Table 3 continued

Form	Incentive	Rating Method M	Rating Method sd	Dollar Method M	Dollar Method sd
B	Party for top performers	4.30	1.51	8.84	58.36
B	Pass-fail grading system	4.29	1.80	8.08	56.38
B	Teach a class	4.26	1.60	4.35	12.37
B	Recommended for rope	4.18	1.72	2.34	5.12
A	Special classroom seating	3.51	1.62	0.98	3.42

Figure 1

Distribution of Incentive

Attractiveness Ratings

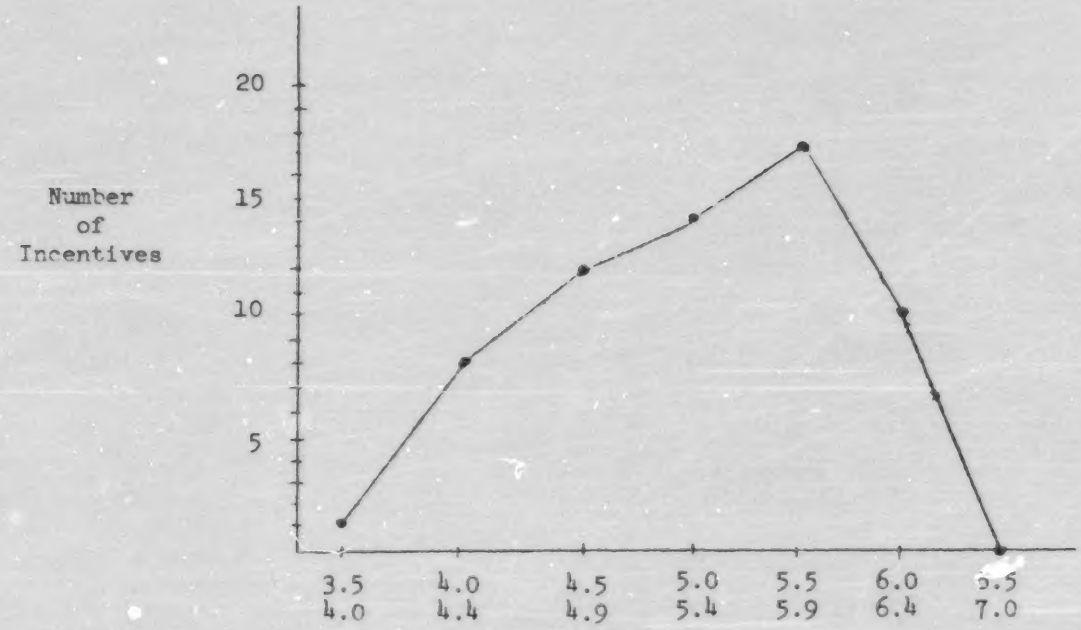
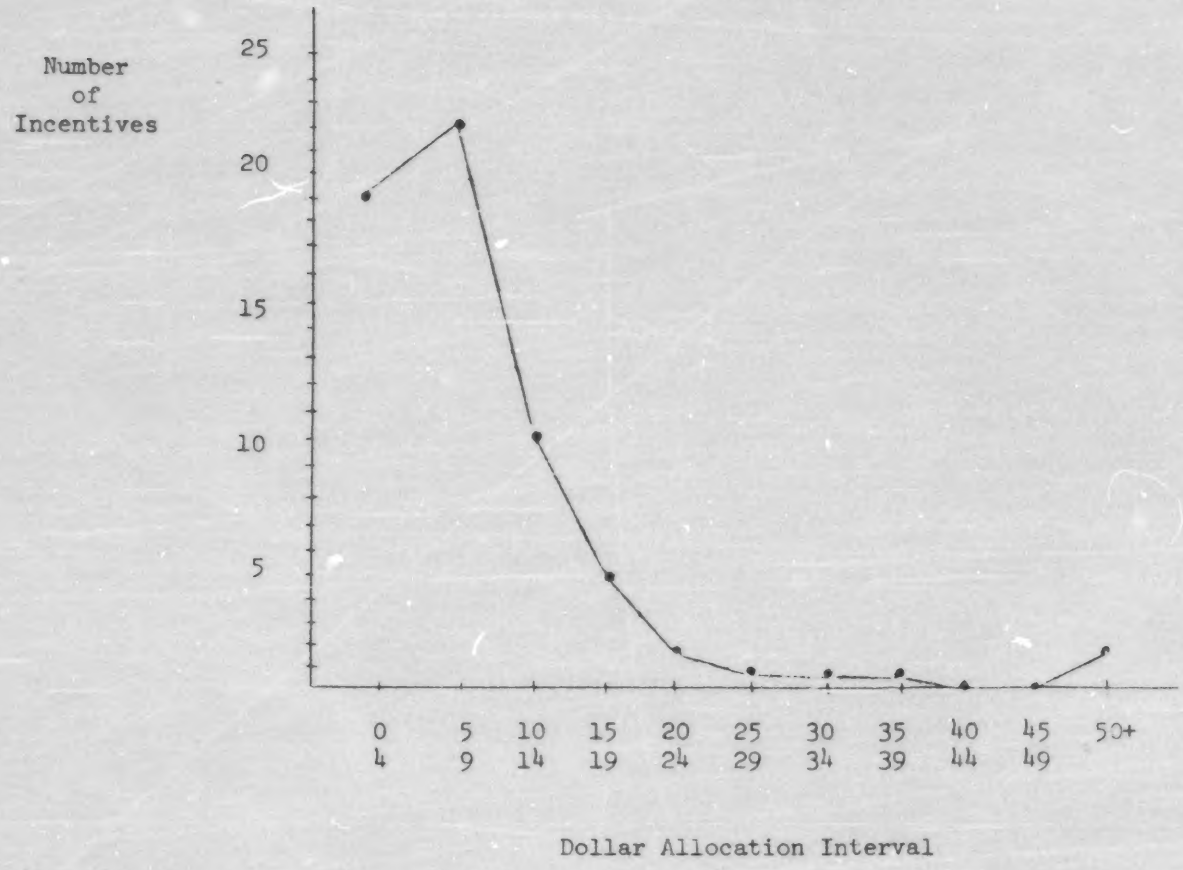


Figure 2

Distribution of Incentive Attractiveness

Dollar Attributions



honor students (1.95), recommendation for rope (2.34), being chosen group spokesman (2.50), helping instructor (3.02), being in class with same-rank students (3.17), NCO club meals (3.35), honor dormitory (3.45), and freedom from classroom exercises (3.46). Further summary information is given in Table 4, which lists those incentives with mean dollar allocations above the expected value.

Table 4

Incentives with Dollar-Attractiveness
Means Above the Expected Value

Questionnaire Form

A (E.V. = 9.375)		B (E.V. = 10.00)	
Incentive	Mean	Incentive	Mean
Choice of base	56.75	Promotions	64.61
College credit	35.13	Phone calls	32.16
Time-off	27.22	Not failing	21.23
Treat as individual	23.47	Early base notification	19.14
Reduced squadron detail	15.65	Information, military	16.46
Opportunity to cross-train	15.03	Information, strengths	16.04
Advanced instruction	13.68	Certificates	11.75
Self pacing	11.07	Commendation letter	11.11
Coed classes	11.00	Difficult work	10.56
Smoking and drinking	10.66	Explanation for orders	10.46
Civilian clothes	10.53	Dorm choice	10.38

Thus, it appears from this descriptive analysis, that, by examining the extremes of the preference distribution, incentives of higher and lower attractiveness can be very generally distinguished. With some exceptions, the more attractive incentives tended to focus on outcomes that: (a) could be considered as pertinent basically to the individual himself with implications for his future career, rather than emphasizing interpersonal contact explicitly; and (b) involve external administrative action (and probable cost) for their delivery. On the other hand, the less attractive incentives generally concerned public forms of recognition and identification with a reference group of military superiors. This is generally consistent with results from Army basic training, where mementos or ceremonies recognizing achievements were not powerful motivators (Datel and Legters, 1970).

Two methodological conclusions were also evident from these preliminary analyses. First, there was a minor bias evident in the form variation of the questionnaires. Differences in overall incentive means between questionnaires were significant ($t = 2.07$, $p < .05$). Of the 11 highly attractive incentives, 7 appeared on Form A and 4 on Form B,

while of the 16 incentives cited for lower attractiveness, 10 were on Form B and only 6 occurred on Form A. This slight questionnaire bias then, was of the nature of having more attractiveness of incentives represented in Form A. The difference was not associated with sampling differences, since, in each group administration, half the respondents randomly received each form.

Secondly, the two methods of measuring incentive attractiveness enhanced the validity of inference concerning the incentive value concept by providing convergent measurements. This convergence is subjectively evident in the comparison of incentives noted above as being in the same extreme portion of the attractiveness distributions of the rating-method and dollar-method responses. Additional analyses comparing the two methods empirically substantiated this convergence. As a summary indicator, mean attractiveness judgments from the two methods, as shown in Table 3, were plotted in bivariate graphical form with each incentive as a data point. These scatterplots for Forms A and B are included as Appendix E. Both displays depict a close correspondence of methods. The best-fitting lines conform to a positive relationship, and the narrowness of point-defined ellipsis around those lines suggest small deviations and a reasonably high coefficient of agreement. From these figures, one can infer a strong overall correlation between methods for attractiveness judgments of each set of incentives.

Correlation coefficients were also computed for method agreement, for each of the 62 incentives across respondents. The complete set of correlations comprises Appendix F. The appendix shows the intermethod correlations and the number of incentives correlating more highly than the between-method correlations with the given incentive within each method (off-diagonal correlations). The maximum number of greater within-method correlations was 31 for incentives on Form A and 29 for those on Form B. Agreement was found to vary across incentives. The following incentives showed significant between-method agreement and convergent-discriminant validity as indexed by fewer than 10 higher correlations within either method: college credit, honor dorm, civilian clothes, pictures and names of honor students posted, special classroom seating, promotions, certificates, eliminating involuntary cross-training, excused from class based on exam, field trips, influence over class, pass-fail grades, challenging work, information about strengths and weaknesses, explanation for orders, dorm choice, not failing, rope recommendation, meals at NCO club, and teaching a class. It can also be seen that there were fewer within-method correlations exceeding between-method agreement for Form B incentives, particularly with respect to the dollar-distribution method.

Dimensions of Incentive Attractiveness

In an attempt to delineate the conceptual nature of the incentives by identifying dimensions or clusters of incentives, the attractiveness rating correlation matrices were subjected to "principal factor" factor analyses with factor rotations to the varimax criterion. Separate

analyses were necessary for questionnaire Form A responses (32 incentives, 212 respondents) and Form B responses (30 incentives, 190 respondents). In both cases, however, the principal factor analysis revealed a large general factor, and each rotation program required nine factors to accommodate all of the common variance. Moreover, the analyses were similar in that the first four rotated factors accounted for 77 percent of the variance for both forms. To summarize the derived orthogonal factor structure, the major factors and their respective contributions are described as follows for Form A and Form B incentives (factor matrices are presented in Appendix G).

Form A factor structure. The nine rotated factors were as follows:

I. This factor appeared to represent recognition, particularly in terms of the permanent recording of one's recognition. Variables contributing to this factor (and their loadings) were: merit letter (.84), press release to home town paper (.63), encouragement (.55), ribbon (.54), having pictures-names posted (.47), verbal praise (.43), honor dorm (.42), and recommendation as a future instructor (.42).

II. This factor also involved recognition, but with apparent reference to recognition and self-control in the classroom environment. Variables defining the factor were: freedom from classroom exercises (.64), special classroom seating (.61), display of completed work (.44), and self-evaluation of performance (.41). Posting names and pictures loaded on this factor (.36) as well as on factor I.

III. This factor can perhaps best be described as pertaining to the trainee's self-development. It is comprised of the following incentives: setting learning goals (.64), being treated as an individual (.53), extra advanced instruction (.46), information about civilian occupations related to training (.42), and choosing one's own roommates (.41).

IV. Factor IV remains nameless because of the few contributing incentives and their discrepant loadings: college credit for training (.85), choice of base assignment (.40), and to a weaker extent, coed classes (.34) and reduced squadron detail (.34). These variables may be tied together, however, by their involvement of a loosening of Air Force regulations or practices.

V. Being chosen group spokesman was the only incentive defining this factor (.84).

VI. This factor connotes personal freedom in general on-base behaviors. It was comprised of: wearing civilian clothes (.54), relaxation of curfew restrictions (.48), reduced squadron details (.47), time-off (.40), and smoking and drinking in class (.39).

VII. This was a fairly weak factor consisting of two variables relating to social contact with instructors: interaction with instructor (.67) and receiving encouragement (.41).

Factors VIII and IX consisted of self-pacing (.74), and a combination of freedom from supervision (.51) and honor dorm (.58), respectively.

Form B factor structure.

I. Much like Form A, the first factor here was a strong recognition dimension, comprised of incentives especially pertinent to recognition by one's Air Force colleagues: pictures and names posted (.79), honor student identity passed on (.68), recognition for achievements (.58), being liked and accepted (.48), certificates (.45), press release to base paper (.45), and being in a class with students of the same rank (.40).

II. The incentives previously thought to denote the more direct social behaviors emerged on this factor: social interaction (.73), being concerned for (.68), being liked and accepted (.52), and helping the instructor (.41).

III. Though defined by only two variables, factor III reflects competence-related aspirations: being able to teach a class (.69) and challenging, difficult work (.52).

IV. The only high loadings for meals at NCO club (.60) and being recommended as a "rope" (.50) suggest identification with military officers.

Factors V and VI included incentives indicative of trainee control although specific influence over class activities (loading of .71 on factor VI) was separated from being excused from class (.60), and having orders explained (.55) and suggestions implemented (.36, factor V).

VII. This was a rather directly interpretable information/feedback factor consisting of: information on military assignments (.71), early notification of base assignment (.49), and information about strengths and weaknesses (.34).

Factors VIII and IX were single item factors with moderate as well as singular loadings for cross-training and pass-fail grading.

Thus, recognition appears to be the dominant incentive dimension in the present data, with subsidiary clusters of personal freedom and development, and social behaviors being identifiable.

Determinants of Incentive Preference

Further examination of the nature of training incentives revealed several correlates of their preference associated with characteristics of the trainee respondents and their training environment. This section reports results pertinent to the prediction of incentive attractiveness, derived from investigation of the covariation of attractiveness

differences and differences in personal and organizational variables. The statistical analyses involved were principally bivariate correlations and comparisons of mean attractiveness ratings across sample subgroups.

Results in this section are reported for incentive attractiveness as measured with the 7-interval rating scale. Due to the previously demonstrated method convergence, it is possible, for parsimony's sake, to restrict attention to one of the two measures. While the dollar method yields psychometrically stronger scaled data, its utility was limited in this research by two factors: (a) since many of the incentives possessed explicit monetary cost implications (e.g. free phone calls, parties, time-off), judgments of preference could have been influenced by the objective cost of their attainment, as well as abstractly perceived reward value, and the cost factor was not constant across incentives; and (b) in this preliminary data-collection procedure, respondents were confronted with the unusually complex task of distributing dollars among a large set of (30) incentives, which may have contributed to a skew in the distribution. Previous uses of this method have involved smaller sets of (6-10) incentives (Nealey, 1964). In the follow-up sample, to be reported later, this limitation was reduced. Consequently, for present purposes, correlates of only the attractiveness-rating responses were considered.

Sex. The individual's sex was related to preferences for eight of the incentives. Significant mean differences shown in Table 5* indicate that males viewed ribbons and recommendation as a future instructor as more attractive incentives than did females. On the other hand, the following incentives were valued more highly by females: self-pacing, information about military assignments, having suggestion implemented, press release to base paper, explanation for orders, and having others be concerned for them. Females also preferred, to a marginally significantly greater extent than did males, being liked and accepted, being treated as an individual, and choosing their roommates. These results suggest that differential preferences for incentives with social reinforcement connotations favor the female population, as previously indicated in nonmilitary research (Raben, et al., 1973). Males preferred two incentives related to personal recognition more than did WAFs.

Race. The individual variable of race was a strong predictor of incentive preferences. Seven differences between white and black trainees' ratings were significant at the .01 confidence level and three were significant at $p < .05$ (Table 6). Blacks perceived several incentives as more attractive than did whites: receiving encouragement, recommendation as a future instructor, ribbons, press release to home

*Results concerning individual and organization determinants of preference should be interpreted with some caution, since multiple ANOVs and t-test were performed on incentive attractiveness variables which were in some cases interrelated, as shown by the factor analyses.

Table 5

Incentive Attractiveness Differences Between Male and Female Trainees

Incentive	Sex: Male (N=357) M	sd	Female (N=45) M	sd	F	t
Ribbon for performance	5.90	1.20	5.21	1.32	5.57*	3.54**
Self-pacing	5.64	1.41	6.42	1.17	5.38*	3.52**
Recommended as instructor	4.93	1.70	4.05	2.17	4.34*	3.12**
Information, military	5.80	1.28	6.44	0.80	6.33*	3.24**
Having suggestions implemented	5.28	1.14	5.78	0.97	4.54*	2.77**
Press release base paper	4.49	1.43	5.11	1.22	4.51*	2.75**
Explanation for orders	5.68	1.28	6.22	0.97	4.40*	2.70**
Being concerned for	5.20	1.28	5.85	1.17	6.30*	3.20**
Being liked and accepted	5.61	1.34	6.11	1.15	3.34[a]	2.37*
Choice of roommates	5.88	1.30	6.42	0.96	3.13[a]	2.66**
Treated as individual	6.33	1.05	6.74	0.56	2.77[a]	2.54*

Note: *$p < .05$

[a] p approaches .05

Table 6

Incentive Attractiveness Differences for Black and White Trainees

Incentive	Race				
	White (N=358)		Black (N=44)		
	M	sd	M	sd	t
Receiving encouragement	5.63	1.19	6.42	0.86	4.27
Recommended as future instructor	4.71	1.77	5.73	1.43	3.67
Not failing	6.05	1.35	5.00	1.94	4.61
Ribbon for performance	5.74	1.25	6.42	0.90	3.49
Press release home town paper	5.08	1.44	5.81	1.58	3.13
Display of work	4.50	1.27	5.15	1.26	3.93
Promotions	6.15	1.21	5.32	1.86	4.00
Set learning goals	5.49	1.33	6.04	1.18	2.61
Choice of base assignment	6.49	0.85	6.08	1.52	2.71
Civilian clothes	5.22	1.76	4.46	2.10	2.64

Note: All ts significant beyond $p < .01$

town paper, display of work, and setting learning goals. With the exception of the goal-setting incentive, this pattern suggests stronger preferences for recognition kinds of incentives among black airmen. White trainees preferred not failing, promotion, base choice, and choice of clothing incentives, or generally control and career-related incentives, more than did blacks.

Marital status. An incentive system incorporating the rewards studied here appears particularly geared to the preferences of married trainees. Seven incentives were seen as more attractive by married individuals, and no incentives were significantly more preferred by single trainees. Moreover, six of these marital status-based differences were significant beyond the .01 confidence level (Table 7). The nature of incentives preferred by the married sample varied greatly. They included helping classmates, field trips, time off, receiving encouragement, letters of merit, verbal praise, and information on strengths/weaknesses.

Table 7

Incentive Attractiveness Differences Between Single and Married Trainees

	Marital Status				
	Single (N=342)		Married (N=56)		
Incentive	M	sd	M	sd	t
Letter of merit to parent or loved one	5.55	1.43	6.40	0.96	4.41**
Receiving encouragement	5.66	1.19	6.36	0.86	4.35**
Being able to help classmates	5.09	1.86	5.76	1.23	2.68**
Verbal praise	5.05	1.20	5.44	1.01	2.36*
Field trips	5.23	1.37	5.83	1.23	3.17**
Time-off	6.32	1.05	6.72	0.61	2.86**
Information about strengths/weaknesses	5.26	1.44	5.79	1.21	2.68**

Note: **$p < .01$
*$p < .05$

Education. Differences in educational levels generally failed to predict incentive preferences. Due to the small numbers of trainees with less than a high school education (5) or a college degree (13), comparisons were possible only between the midrange categories of a high school degree and some exposure to college. None of these mean

comparisons were statistically significant. The following differences, however, approached significance: (1) people with some college training preferred reduced squadron details (t = 1.88) and information about civilian occupations (t = 1.78) more than did high school graduates; (2) trainees with a high school education rated certificates as more attractive than did respondents with some college (t = 1.82).

Air Force base. Three parameters of the training environment were examined as possible determinants of incentive attractiveness--training base, whether the trainee had volunteered for his specialty, and whether the trainee had served as a rope. Results for the cross-base comparisons are presented in Table 8. These findings indicate that the base at which an incentive system is introduced may affect its utility, since the rated attractiveness of 13 incentives varied with the base from which trainees were sampled. There was no particular trend toward higher incentive preferences at a single base. Thus, while there appears to be no cross-base bias for incentives generally, consideration of differential attractiveness of specific incentives and base location (and accompanying training programs) will be important to designing a workable incentive system.

Trainees' volunteer status. A few incentive preferences were affected by the voluntary status of the trainee. Those trainees who had volunteered for their training specialty considered ribbons, recommendations as future instructors, and opportunities to help instructors as more attractive than did nonvolunteers. People nonvoluntarily assigned to an AFSC specialty preferred opportunities to cross-train and having orders explained to a greater degree than did volunteers. These relationships can be interpreted in fairly common-sense terms. Volunteers seem more inclined to prefer incentives relevant to their future beneficial involvement in the training system and instructor-student relationships. Nonvolunteers would logically value cross-training as a means to change specialties and career goal attainment possibilities, and they might react adversely to legitimate military authority and seek explanations for what they are instructed to do.

Service as a rope. Those few trainees who had acted as ropes, or leaders in their student squadrons, viewed six of the incentives as more attractive than did trainees who had not been ropes in the past. Incentives more highly valued by ropes were verbal praise, information about civilian occupations, setting their own learning goals, being chosen as group spokesman, receiving encouragement, and helping classmates (Table 9). It is likely that, with the exception of civilian information, service as a rope accustoms the trainee to experiencing these rewards and renders their reward value more salient. However, since many trainees tend to look unfavorably on ropes, who select them for details and onerous squadron duty, the emphasis on helping classmates may possibly be interpreted as a compensatory incentive for the rope to value in the training school setting.

Table 8

Incentive Attractiveness Differences Across Air Force Bases

Incentive	Lackland (N=138)		Sheppard (N=60)		Chanute (N=106)		Keesler (N=98)		
	M	sd	M	sd	M	sd	M	sd	F
Special classroom seating	3.42	1.52	4.31	1.36	3.16	1.65	3.44	1.73	4.41**
Relaxation of curfew	6.22	1.14	5.44	1.25	5.71	1.51	5.52	1.37	3.86**
Eliminate involuntary cross-train	5.68	1.43	4.40	2.04	4.42	1.60	5.35	1.73	7.27**
Excused from class based on exam	4.81	1.48	5.40	1.54	5.00	1.45	5.67	1.32	3.94**
Self-pacing	5.32	1.36	5.62	1.65	6.08	1.16	5.85	1.46	3.38*
Ribbon for performance	6.14	1.04	5.64	1.16	5.92	1.22	5.46	1.41	3.34*
Display of work	4.31	1.38	4.88	1.10	4.87	1.30	4.48	1.19	2.80*
Promotions	6.38	1.11	5.95	1.23	5.73	1.56	5.90	1.33	2.73*
Having suggestions implemented	5.27	1.15	5.30	0.92	5.04	1.26	5.76	0.95	3.67*
Information, strengths/weaknesses	5.50	1.53	4.70	1.30	5.00	1.61	5.57	1.12	2.92*
Explanation for orders	5.54	1.43	5.75	1.12	5.64	1.21	6.18	0.97	2.84*

Note: **$p < .01$
*$p < .05$

Table 9

Incentive Attractiveness Differences for Volunteers vs. Nonvolunteers and Ropes vs. Nonropes

Incentive	I. Volunteer (N=320) M	sd	Nonvolunteer (N=80) M	sd	t
Opportunity to cross-train	5.69	1.23	6.14	1.00	3.60**
Ribbon for performance	5.92	1.14	5.48	1.47	3.69**
Recommended as future instructor	4.97	1.74	4.36	1.78	2.79**
Explanation for orders	5.68	1.29	6.16	0.99	3.11**
Help instructor	5.05	1.30	4.59	1.19	2.88**

Incentive	II. Ropes (N=36) M	sd	Nonropes (N=366) M	sd	t
Verbal praise	5.63	0.96	5.05	1.19	2.82**
Information, civilian	6.53	0.60	5.97	1.32	2.47*
Set learning goals	6.21	1.18	5.53	1.75	2.28*
Group spokesman	5.63	2.58	4.43	2.34	2.90**
Receiving encouragement	6.26	0.73	5.70	1.20	2.74**
Help classmates	6.10	0.77	5.45	1.96	1.97*

Note: $^{**}p < .01$
$^{*}p < .05$

Reinforcing agent. Twenty of the social incentives were rated on attractiveness when administered by instructors and classmates. Results of comparisons of the contribution of varying reinforcing agents to attractiveness are presented in Tables 10 and 11. Correlations between attractiveness independent of agent and attractiveness of instructor and class-administered incentives were, generally, equivalent. The only major difference between correlations occurred for "receiving an explanation orders," where the correlation was substantial ($r = .47$) for instructor administration and negligible ($r = .05$) for class administration. However, in the more direct comparison of attractiveness mean ratings for the two agents of administration, several differences were noted (Table 11). The reinforcing agent had a significant impact on the perceived attractiveness of six of the incentives, as indicated by t-tests for differences between means of large samples. Only one of these incentives was more attractive when administered by classmates, that being a party for the top performers, the overall attractiveness rating for which was rather low. The following incentives were significantly more attractive when administered by instructors: extra advanced instruction, information about strengths and weaknesses, and explanations

Table 10

Correlations Between Incentive Attractiveness Ratings and Independent Attractiveness Ratings for Instructor and Peer Administration of the Incentives

Incentive	Instructor	Peers
Verbal praise	.40	.33
Advanced instruction	.36	.27
Receiving encouragement	.51	.40
Recommended as future TTI	.55	.50
Treated as an individual	.41	.48
Letter of merit to loved ones	.50	.46
Social event	.36	.24
Group spokesman	.50	.54
Part for top performers	.31	.32
Influence over class routine	.24	.37
Have suggestions implemented	.19	.13
Information: strengths/weaknesses	.39	.26
Explanation for orders	.47	.05
Recognition for achievements	.41	.35
Being liked and accepted	.40	.47
Social interaction	.38	.44
Being concerned for	.41	.36
Recommended for rope	.54	.48
Meals at NCO club	.26	.31
Teach a class	.48	.44

Table 11

Effects of Reinforcing Agent on Incentive Preference: Mean Attractiveness When Administered by Instructors and Peers

Incentive	Administering Agent: Instructor M	Instructor sd	Peers M	Peers sd	t
Extra advanced instruction	5.35	1.31	4.55	1.31	6.16**
Information: Strengths/weaknesses	5.25	1.45	4.52	1.50	4.87**
Explanations for orders	5.41	1.52	4.68	1.66	4.30**
Letter of merit to loved ones	5.27	1.43	4.95	1.49	2.47*
Recommended as future instructor	4.86	1.87	4.48	1.78	2.24*
Party for top performers	4.36	1.66	4.71	1.55	2.06*
Being liked and accepted	5.35	1.38	5.60	1.40	1.79
Recognition for achievements	5.48	1.31	5.24	1.38	1.71
Social interaction	4.88	1.30	5.07	1.28	1.46
Have suggestions implemented	5.19	1.29	5.02	1.22	1.31
Meals at NCO club	4.03	1.67	3.82	1.53	1.24
Being treated as an individual	5.93	1.42	6.07	1.27	1.08
Influence over class routine	4.81	1.48	4.73	1.33	< 1
Being concerned for	5.00	1.42	5.10	1.38	< 1
Recommended for rope	4.25	1.79	4.16	1.83	< 1
Teach a class	4.53	1.81	4.38	1.64	< 1
Verbal praise	5.20	1.37	5.27	1.21	< 1
Receiving encouragement	5.54	1.23	5.49	1.19	< 1
Social event	4.81	1.56	4.88	1.45	< 1
Group spokesman	4.52	1.72	4.68	1.76	< 1

for orders ($p < .01$); and sending a letter of merit to loved ones, and being recommended as a future instructor ($p < .05$).

Thus, as previous literature has indicated (Raben, et al., 1973), the value of incentives to potential recipients depends in part on the source of their administration or delivery, particularly as that source reflects differences in reference groups with which the person may identify, which, in this study, were primarily differentiated on the basis of organizational level. The relative value of peer and instructor reinforcement depend, however, on the nature of the specific incentives involved. The lack of agent differences for some incentives indirectly supports arguments for peer reinforcement, in that, in many cases, peer reinforcement was valued at least as highly as instructor reinforcement. That is, social incentives such as verbal praise, being liked and accepted, social interaction, being treated as an individual, being concerned for, and attending a social event were not accorded differential attractiveness across agents; in fact, while these mean differences were not significant, the means were slightly higher for peer administration of these incentives.

Leadership climate. Indices of leadership climate were derived from the trainees' descriptions of their instructors' behavior on the IBDQ. The possible range of scores on both the Consideration and Initiating Structure dimensions was 12-60. In the present sample of trainees, the mean Consideration score was 43.79 (s.d. = 8.72), and the mean Structure score was 38.30 (s.d. = 7.03). The two leadership dimensions were also generally independent, as the correlations between Consideration and Structure were .14 ($p < .05$) for Form A respondents, and .09 (n.s.) for Form B respondents. The respective sample sizes were 212 for Form A and 190 for Form B.

Significant relationships between climate and incentive preference are documented in Table 12. Many preferences were associated with instructor behaviors. To the extent that the instructor was described as considerate, trainees viewed 22 incentives as being more attractive, with 18 of these relationships being significant at the .01 confidence level. Preference for 20 incentives was greater to the extent that the instructor was perceived to initiate structure, and 12 of the correlations reached the .01 significance level. Preferences for 11 of the incentives were positively related to both climate dimensions. With the exception of three incentives (posting pictures and names of most improved students, recognition for achievements, and passing on identity of honor students), those incentives relating to both dimensions showed slightly stronger relationships to consideration.

Multiple interpretations of these relationships seem possible. If one assumes that the present incentives may or may not be currently operative in the situation, and that climate variables are conductive to their perceived value, then many of the relationships are predictable. For example, a considerate climate "makes it possible for" the following incentives to be attractive, since their presence would fit that

Table 12

Significant Relationships Between Incentive Attractiveness and Two Dimensions of Leadership Climate

Incentive	Leadership Dimension: Consideration	Leadership Dimension: Initiating Structure
Pictures and names of honor students posted	.30	.16
Helping instructor	.27	
Being liked and accepted	.25	.21
Letter of merit to loved ones	.25	.18
Interaction with instructor	.24	
Receiving encouragement	.23	
Difficult, challenging work	.23	
Social Interaction	.23	.16
Press release: hometown paper	.22	.15
Set learning goals	.22	
Group spokesman	.21	.14
Recommended as future instructor	.21	
Verbal praise	.21	
Certificate	.20	.18
Honor dorm	.20	.14
Promotion	.19	
Pictures and names of most improved students posted	.19	.28
Recognition for achievements	.18	.25
Helping classmates	.17	
Teaching a class	.17	
Identity of honor students passed on to next instructor	.16	.29
Self pacing	.15	
Party for top performers		.29
Dorm choice		.28
Same-rank students in class		.23
Free phone calls		.19
Letter of commendation		.19
Relax curfew restrictions		.18
Freedom from supervision		.17
Advanced instruction		.16
Press release: base paper		.14

climate: helping instructor, being liked, interaction, receiving encouragement, setting self learning goals, praise, helping classmates, and teaching a class. Similarly, a structuring climate would appear conducive to implementing incentives which require administrative, structuring activity, e.g.: certificates, posting names and pictures, passing on identity of honor students, dorm choice, commendation letter, and so forth. However, particularly with regard to a structuring climate, some incentives may take on enhanced value because that climate impedes or is inconsistent with their operation, or, in motivational terms, a deprivation hypothesis may account for incentive salience. Examples which seem to fit this alternate interpretation include relationships between structure and the attractiveness of: being liked and accepted, social interaction, and freedom from instructor's supervision.

Since perceived climate is associated with the behavior of training instructors, climate might be expected to relate differently to the attractiveness of social incentives administered by instructors and classmates. Table 13 presents correlations of climate with attractiveness determined by these dual modes of administration. Considerate instructor leadership tended to correlate more strongly with the attractiveness of instructor-delivered than peer-delivered incentives, particularly with regard to: verbal praise, advanced instruction, being treated as an individual, having suggestions implemented, getting explanations for orders, and recognition for achievements. This trend was not apparent, however, for the initiating structure climate dimension. In a few cases, instructor structuring related significantly to peer-delivered but not to instructor-delivered incentive attractiveness: receiving encouragement, suggestion implementation, social interaction, and being concerned for. Consistent with the previous alternative interpretation, instructor's structuring may render these incentives more attractive (and perhaps probable) when they are administered by class members other than the instructor.

Regardless of the undetermined causal direction of these relationships or the process underlying them, the present evidence strongly suggests that the attractiveness of potential incentives are intimately tied to the leadership climate in which those incentives are to be implemented. This conclusion implies a need for close scrutiny and analysis of training situations prior to the development of social incentive systems.

Personal motives. The individual motives of technical trainees were found to be predictive of their incentive preferences. Motivational characteristics of the sample are presented in Table 14. In terms of relative motive strengths, trainees were motivated toward affiliative, altruistic, recognition, and power goals, in that order. Since the recognition scale was developed and originally applied to this Air Force sample, comparisons of recognition motives of trainees and other groups in the population are unavailable. However, the pattern of means across the other three dimensions generally showed little deviation from results obtained with previous samples of college students.

Table 13

Correlations Between Incentive Attractiveness as Administered by Instructors and Peers and Two Dimensions of Leadership Climate

		Leadership Climate			
		Consideration		Structure	
Incentive	Agent:	Instructor	Peers	Instructor	Peers
Verbal praise		.25**	.10	.15*	.18**
Advanced instruction		.18**	.08	.16*	.28**
Receiving encouragement		.23**	.16*	.11	.15*
Recommended as future TTI		.25**	.14*	.01	.00
Treated as an individual		.16*	.03	.06	.02
Letter of merit to loved ones		.16*	.13	.19**	.10
Social event		.14*	.09	.16*	.24**
Group spokesman		.18**	.21**	.22**	.18**
Party for top performers		.11	.11	.17*	.21**
Influence over class routine		.07	.07	.08	.07
Have suggestions implemented		.24**	.08	.12	.18**
Information: strengths/weaknesses		.10	.10	-.11	.00
Explanation for orders		.21**	.01	.09	.03
Recognition for achievements		.29**	.10	.24**	.13
Being liked and accepted		.26**	.18**	-.01	.08
Social interaction		.26**	.14*	.09	.15*
Being concerned for		.20**	.18**	.13	.16*
Recommended for rope		.05	-.03	.18**	.17*
Meals at NCO club		.11	.06	.04	.03
Teach a class		.23**	.15*	-.01	.05

**Significant at $p < .01$
*Significant at $p < .05$

Table 14

Mean Trainee Scores on the Personal Motives Dimensions

Motive	Mean	s.d.
Altruism	20.51	6.67
Power	27.02	6.16
Affiliation	18.08	5.77
Recognition	23.97	6.07

Affiliation and power motives of USAF trainees and undergraduates are similar in strength. Weaker scores on the power item dealing with the exercise of control over people and situations (M = 10.39) than on the other two power items (M = 8.96, 7.71) dealing with power over activities and decision processes weakened the overall power motive score. Item scores within the other three dimensions were more consistent (Table 15).

Table 15

Mean Item Scores on the Personal Values Questionnaire

Item	Dimension	Mean	s.d.
Being active in helping others	Altruism	6.66	2.47
Promoting well-being of others		6.87	2.46
Sacrificing for others		7.00	2.68
Having a say	Power	8.96	2.71
Exercising control		10.39	2.21
Influencing decisions		7.71	2.86
Getting along with others	Affiliation	5.47	2.12
Having friends		6.69	2.54
Being liked		5.96	2.33
Gaining acknowledgement	Recognition	8.60	2.45
Being respected		7.46	2.37
Being recognized for achievement		7.94	2.78

The measure of personal motives is ipsative in nature; that is, high scores on some motives necessarily result in low scores on others. As a consequence, there must exist some degree of inverse relationship between some motives. In the present sample, the strongest inverse correlations were found for altruism and recognition, and for power and

affiliation. Altruism and power, and affiliation and recognition were moderately inversely related. Altruism and affiliation, and power and recognition were independent motives (Table 16).

Relationships between motivation and incentive preferences are shown in Tables 17 through 20. Individual recognition motives were significantly related to preferences for 15 incentives, almost all of which had been thought originally (see Table 1) to denote recognition and approval. Recognition motives correlated with the attractiveness of publicly posting the names and pictures of both "honor" and "most improved" students. It is also interesting to note that recognition motives were related to the attractiveness of a press release to one's hometown newspaper, but not to the base paper; and to a letter of commendation for the record, but not to a letter of merit sent to loved ones. Several specific tangible forms of individual recognition, including ribbons, certificates, commendation letters, and display of completed work were more attractive for trainees with stronger recognition motives.

Affiliation motives were also related to incentive preferences. Again the incentives involved fit the preliminary concept of affiliative, identitive motive fulfillment, especially being liked and accepted, being concerned for, and social interaction. The other three relationships in Table 20 are interpretable in a post hoc, if not so direct way. The relationship of affiliative motives to the attractiveness of helping the instructor suggests that the instructor may serve as a significant other with whom some trainees aspire to identify and affiliate on a social level. The remaining two incentives, time off and not failing, imply an indirect implication of time available to the trainee for social activities and group affiliative involvement. To the extent the trainees do passing work and have time off from training duties, they may have greater opportunities to interact and affiliate with others within or outside their immediate classroom environment. Thus, trainees with stronger affiliation motives value those incentives more highly.

No incentive preferences correlated positively with power motivation. However, 15 incentives were inversely related to power motives. Among these, some, such as social interaction, praise, being liked, etc. could be interpreted as leveling social status differences, which might be incompatible with having a base from which to exercise power (at least as defined in terms of legitimate authority and status incongruencies). Unfortunately, from the viewpoint of theoretical understanding of incentives, the attractiveness of many social incentives which were constructed to represent social influence; e.g., influence over class, having suggestions implemented, choosing bases, and setting learning goals, etc. was not related to power motivation.

The strength of trainees' altruistic motives was related to the attractiveness of helping classmates learn material. The significant relationships of this motive to advanced instruction, diagnostic feedback, and challenging work incentives suggest that while the receipt of

Table 16

Intercorrelations Among Personal Motives Dimensions

	Altruism		Power		Affiliation		Recognition	
Form:	A	B	A	B	A	B	A	B
Altruism	--	--						
Power	-.29	-.47	--	--				
Affiliation	.02	-.16	-.49	-.38	--	--		
Recognition	-.60	-.45	.00	.05	-.25	-.38	--	--

Table 17

Significant Relationships Between Incentive Preference and Altruistic Motives

Incentive	Correlation
Help classmates	..22
Advanced instruction	.18
Information: strengths/weaknesses	.16
Difficult challenging work	.15
College credit for tech training	-.19
Party for top performers	-.15

Table 18

Significant Relationships Between Incentive Preference and Power Motives

Incentive	Correlation
Social interaction	-.29
Verbal praise	-.25
Being liked and accepted	-.22
Help instructor	-.22
Being concerned for	-.22
Time off	-.21
Promotions	-.19
Certificates	-.19
Receiving encouragement	-.18
Help classmates	-.17
Not failing	-.16
Same-rank students in class	-.16
Honor dorm	-.16
Choose roommates	-.16
Recognition for achievements	-.15

Table 19

Significant Relationships Between Incentive Preference and Personal Recognition Motives

Incentive	Correlation
Recognition for achievements	.28
Pictures and names of honor students posted	.24
Pictures and names of most-improved students posted	.23
Certificates	.20
Press release to hometown newspaper	.20
Recommended as future instructor	.19
Identity of honor students passed on to next instructor	.19
Recommended for rope	.18
Group spokesman	.18
Honor dorm	.16
Receiving encouragement	.15
Letter of commendation in permanent record	.14
Display of completed work	.14
Ribbon for outstanding performance	.14
Same-rank students in class	.14

Table 20

Significant Relationships Between Incentive Preference and Affiliation Motives

Incentive	Correlation
Being liked and accepted	.27
Being concerned for	.26
Social interaction	.24
Time off	.19
Help instructor	.18
Not failing	.14

these incentives would most directly help the trainee, they might also provide him with a basis for, or context in which, to help his fellow trainees, and perhaps the Air Force generally upon completion of training.

This evidence of motivation-incentive preference relationships is of particular importance to the development of practical incentive systems. First, it indicates systematic ways in which individual differences can be taken into account in planning incentive systems. Although the magnitude of relationships was not large, the motivational variables seem to offer the best means of subgrouping the population in terms of delineating the types of incentives most likely to motivate them. More meaningful relationships of motives to preferences were evident in this study than were associations between preferences and the other individual and organizational variables investigated. Identification of motive patterns of incoming trainees could then facilitate the use of a cafeteria incentive system, where different subgroups receive different, valued rewards for their performance. Especially if the incentives in the various cafeteria "dishes" can be made equally cost effective, the training system can feasibly reward individuals for their effectiveness in a way that is compatible with their backgrounds and preferences.

The second point to be noted in this context concerns the direction of the empirical relationships between motives and incentive preferences. For an individual-differences-based system to work, it is assumed that the individual difference measure predicts the preferences. Given the present system of measuring motives in terms of attractiveness of general life goals, it seems reasonable to tentatively infer that the direction involves motives leading to (partially causing) preferences. This seems most likely in view of the presumed long-term development of values and motives, and the measurement of attractiveness of incentives which the trainee may never have experienced. This conclusion concerning direction of association is clearer for the motivational variables than for the previously discussed leadership climate variables. While many incentive preferences were related to instructor consideration and structuring, it is plausible that the (potential) availability and perceived value of incentives may influence perceptions of climate as it currently exists, as well as climate partly determining incentive preferences. That is, based on the present measurement methods, and the nature of the variables involved, we can more confidently conclude that motives predict incentive attractiveness than that leadership climate predicts incentive attractiveness, and that preferences are related to both of these individual and training-environment parameters.

Incentive Feasibility

In addition to the reward value of incentives, a second basic facet of the development of effectiveness-contingent incentive systems involves the feasibility of administering incentives and making their receipt contingent on training effectiveness. The present survey of

Air Force trainees asked for two sets of contingency judgments: the extent to which incentives currently depend on effectiveness, and the extent to which they could be administered contingent upon effectiveness. The resulting mean instrumentality and feasibility estimates for all incentives are listed in Table 21. The overall mean instrumentality of training effectiveness for obtaining the incentives presented in Questionnaire Form A was 3.39 on the 5-interval scale, with a standard deviation of .96; for Form B, M = 3.29 and s.d. = .96. These means fall between the descriptions "being effective has nothing to do with obtaining this outcome" and "being effective makes it easy to obtain this outcome."

For ease of comparison of these results with those for incentive attractiveness, the incentives are listed in Table 21 in their descending order of rated attractiveness. The range of current instrumentality values was quite restricted (2.86-3.81). Only four incentives fell below the neutral point (3.0) of the scale, such that effectiveness was perceived as detrimental to their attainment. These incentives were: freedom from classroom exercises, meals at NCO club, party for top performers, and special seating in classrooms. These incentives were also in the lower part of the preference distribution, ranking 54th, 55th, 58th, and 62nd, respectively, on the scale of rated attractiveness. Incentives with highest instrumentality ratings (3.60-3.81) were the following: college credit, being treated as an individual, promotions, not failing, ribbon, advanced instruction, encouragement, self-pacing, commendation letter, merit letter to loved ones, set learning goals, help classmates, certificates, recognition and verbal praise. All of these incentives were in the upper two-thirds of the rated attractiveness distribution. Those incentives in the upperhalf of the attractiveness distribution, but which were low in perceived instrumentality (3.3 or lower) were: free phone calls, reduced squadron detail, coed classes, explanations for orders, dorm choice, and smoking and drinking in class. Because of the scale descriptors; e.g., "being effective makes it easy to obtain this outcome," higher-instrumentality incentives can be inferred to be performance-contingent to some degree as well as operative in the current training situation, though generally to a very slight degree. None of the incentives could be considered as currently deliverable in a systematic way, since none approached "certain" receipt given effectiveness.

Future feasibility estimates were somewhat more dispersed with a range on the 5-point scale of 2.15-3.82. The mean for incentives on Form A was 3.26 (s.d. = .96), and for incentives on Form B, M = 3.03 (s.d. = .20). Twenty-two incentives fell below the neutral point (3.0) that indicated a 50-50 chance that incentives could be tied to performance. Among the more feasible incentives (3.5+) were: college credit, being treated as an individual, promotions, not failing, ribbon, opportunity to cross-train, advanced instruction, encouragement, self-pacing, commendation letter, letter of merit to loved ones, certificates, verbal praise, and being recommended as a future instructor. As indicated by the listing of more instrumental and feasible incentives here, and by

Table 21

Mean Incentive Feasibility as Perceived by Trainees

Incentive	Current Instrumentality M	Current Instrumentality sd	Future Feasibility M	Future Feasibility sd
Choice of base assignment	.344	1.13	3.44	1.31
College credit	3.72	1.07	3.77	1.18
Time off	3.48	1.03	3.34	1.29
Treated as individual	3.70	1.09	3.62	1.33
Phone calls	3.16	1.09	2.75	1.49
Reduced detail	3.22	1.16	2.98	1.32
Promotions	3.76	1.02	3.82	1.12
Early assignment notification	3.26	1.03	3.17	1.26
Information, civilian jobs	3.44	0.84	3.34	1.07
Coed classes	3.15	0.97	3.04	1.20
Choice of roommates	3.32	0.92	3.02	1.25
Not failing	3.81	1.21	3.71	1.25
Information, assignments	3.33	0.96	3.11	1.26
Ribbon	3.69	1.04	3.63	1.15
Opportunity, cross-train	3.43	0.96	3.59	1.05
Relax curfew	3.37	0.94	3.25	1.17
Advanced instruction	3.61	0.92	3.59	1.09
Order explanation	3.28	1.03	2.98	1.36
Encouragement	3.66	0.94	3.75	1.00
Dorm choice	3.12	0.97	2.59	1.32
Self pacing	3.60	0.97	3.53	1.12
Being liked	3.35	0.94	3.11	1.24
Commendation letter	3.68	0.96	3.62	1.02
Merit letter to loved ones	3.64	0.96	3.50	1.17
Set learning goals	3.60	0.94	3.43	1.08
Help classmates	3.64	0.85	3.44	1.11
Certificates	3.80	1.00	3.67	1.07
Interaction, instructor	3.47	0.89	3.28	0.96
Recognition	3.69	1.00	3.49	1.16
Smoking, drinking	3.24	1.03	3.18	1.21
Suggestions implemented	3.39	0.88	3.07	1.07
Information, strengths/weaknesses	3.30	0.98	3.27	1.11
Field trips	3.22	0.96	2.96	1.15
Being concerned for	3.35	0.95	2.92	1.25
Social interaction	3.19	0.88	2.79	1.13
Press release home	3.47	0.86	3.20	1.17
Civilian clothes	3.00	0.98	2.79	1.37
Eliminate involuntary cross-training	3.13	1.03	2.99	1.18
Excused from class	3.14	1.10	3.05	1.30
Verbal praise	3.64	0.92	3.50	1.08
Social event	3.18	0.98	2.93	1.21

Table 21 continued

Incentive	Current Instrumentality M	Current Instrumentality sd	Future Feasibility M	Future Feasibility sd
Evaluate performance	3.20	0.95	3.03	1.14
Honor dorm	3.29	1.07	3.11	1.23
Help instructor	3.32	0.95	3.04	1.13
Pictures honor students	3.38	0.85	3.23	1.12
Freedom from supervision	3.12	1.05	2.91	1.16
Influence over class	3.26	0.95	2.83	1.09
Future instructor	3.58	1.02	3.56	1.18
Same-rank students	3.06	0.72	2.60	1.14
Display of work	3.13	0.83	2.95	1.03
Press release base	3.09	0.74	2.69	1.17
Group spokesman	3.34	0.92	3.11	1.25
Identity honor students	3.31	0.99	3.15	1.21
Freedom from exercises	2.99	0.92	2.74	1.16
NCO meals	2.86	0.84	2.15	1.16
Pictures improved students	3.19	0.91	2.86	1.22
Challenging work	3.28	1.01	3.13	1.19
Party	2.99	0.92	2.54	1.23
Pass-fail	3.02	0.91	2.66	1.21
Teach a class	3.20	1.13	3.23	1.19
Rope recommendation	3.29	0.97	2.87	1.26
Special seating	2.93	0.85	2.49	1.07

the scatterplot provided in Appendix G, perceptions of current instrumentality and future feasibility were positively related. However, the reader should be cautioned about direct comparisons from Table 21 of mean instrumentality and feasibility ratings. Examination of the table reveals generally lower means for future feasibility. However, differences in the two response scales dictate different interpretations of scores. For example, the neutral points imply a subjective instrumentality correlation of zero and a subjective feasibility probability of .5; the negative end-points are interpreted as instrumentality = -1.0 and feasibility = zero. The verbal interpretations of these responses differ accordingly.

There was substantial overlap between trainees' ratings of feasibility and attractiveness. Correlations between rated attractiveness and feasibility ranged from .02 to .36. Significant ($p < .01$) attractiveness-feasibility relationships occurred for 43 of the 62 incentives.

Future incentive feasibility was related, in a few instances, to perceived classroom climate. To the extent that trainees' described their instructors as more considerate on the IBDQ, they considered the following incentives more feasible: helping classmates, smoking and drinking in class, setting learning goals, being treated as an individual, certificates, having suggestions implemented, difficult challenging work, helping the instructor, social interaction, and being concerned for. Instructors' structuring behaviors were related only to the feasibility of parties and having meals at the officers' club.

Instructor perceptions of incentive feasibility. Samples of instructors from each of the four bases completed a survey questionnaire which was not as comprehensive as trainees'. Instructors were sampled from the same specialty areas as trainees. A total of 64 instructors (half with Form A incentives, half with Form B) provided information on the future feasibility of incentives, leadership climate, and personal background. The feasibility section of the questionnaire was the same as trainees'. The leadership climate measure involved the same items but a different set of instructions. Whereas trainees described the frequency of actual behaviors of their instructors, the instructors gave their opinions of the extent to which they thought they should engage in those behaviors. This Instructor Opinion Questionnaire was adapted from the Leadership Opinion Questionnaire (Stogdill and Coons, op. cit.) with appropriate changes in wording for the training instructor leadership position. The background information was similar to that provided by trainees, except that instructors were queried on teaching experience and awards and civilian vs. military status.

Instructor and trainee perceptions of the extent to which incentives could be made to depend on effectiveness are compared in Table 22. Instructor and trainee agreement on this measure of incentive feasibility was quite high. The rank order correlation coefficient between trainee and instructor ratings was +.66, with N = 62 incentives. Generally,

Table 22

Mean Incentive Feasibility as Perceived by Trainees and Instructors

Incentive	Trainees M	Trainees sd	Instructors M	Instructors sd
Choice of base assignment	3.44	1.31	3.62	1.10
College credit	3.77	1.18	4.00	0.78
Time off	3.34	1.29	2.75	1.19
Treated as individual	3.62	1.33	4.21	1.10
Phone calls	2.75	1.49	2.60	1.24
Reduced detail	2.98	1.32	3.29	1.20
Promotions	3.82	1.12	3.80	1.22
Early assignment notification	3.17	1.26	3.70	1.07
Information, civilian jobs	3.34	1.07	3.58	1.07
Coed classes	3.04	1.20	2.78	1.20
Choice of roommates	3.02	1.25	2.96	1.00
Not failing	3.71	1.25	2.92	1.30
Information, assignments	3.11	1.26	3.08	1.13
Ribbon	3.63	1.15	3.42	0.97
Opportunity, cross-train	3.59	1.05	2.83	1.20
Relax curfew	3.25	1.17	2.58	1.14
Advanced instruction	3.59	1.09	3.46	1.06
Order explanation	2.98	1.36	3.32	1.25
Encouragement	3.75	1.00	4.08	1.02
Dorm choice	2.59	1.32	3.05	1.12
Self pacing	3.53	1.12	3.52	1.16
Being liked	3.11	1.24	3.75	0.98
Commendation letter	3.62	1.02	3.60	1.26
Merit letter to loved ones	3.50	1.17	3.21	1.18
Set learning goals	3.43	1.08	3.04	1.20
Help classmates	3.44	1.11	3.21	0.93
Certificates	3.67	1.07	3.98	1.17
Interaction, instructor	3.28	0.96	3.79	0.88
Recognition	3.49	1.16	4.28	0.85
Smoking, drinking	3.18	1.21	3.12	1.30
Suggestions implemented	3.07	1.07	3.28	0.85
Information, strengths/weaknesses	3.27	1.11	3.27	1.20
Field trips	2.96	1.15	3.10	1.10
Being concerned for	2.92	1.25	3.47	1.08
Social interaction	2.79	1.13	3.00	1.19
Press release home	3.20	1.17	2.71	1.04
Civilian clothes	2.79	1.37	1.92	1.10
Eliminate involuntary cross-train	2.99	1.16	2.97	1.15
Excused from class	3.05	1.30	3.05	1.15
Verbal praise	3.50	1.08	3.58	1.10
Social event	2.93	1.21	2.21	1.06
Evaluate performance	3.03	1.14	2.79	1.28

Table 22 continued

Incentive	Trainees M	Trainees sd	Instructors M	Instructors sd
Honor dorm	3.11	1.23	2.58	0.97
Help instructor	3.04	1.13	3.15	1.08
Pictures honor students	3.23	1.12	2.88	1.15
Freedom from supervision	2.91	1.16	2.25	1.33
Influence over class	2.83	1.09	2.70	1.02
Future instructor	3.56	1.18	3.21	1.18
Same-rank students	2.60	1.14	2.92	1.29
Display of work	2.95	1.03	2.74	1.18
Press release base	2.69	1.17	3.02	1.33
Group spokesman	3.11	1.25	3.00	0.93
Identity honor students	3.15	1.21	3.40	1.32
Freedom from exercises	2.74	1.16	1.75	0.79
NCO meals	2.15	1.16	2.20	0.99
Pictures improved students	2.86	1.22	2.82	1.20
Challenging work	3.13	1.19	3.30	0.85
Party	2.54	1.23	2.02	1.01
Pass-fail	2.66	1.21	2.67	1.37
Teach a class	3.23	1.19	2.65	1.21
Rope recommendation	2.87	1.26	3.05	1.04
Special seating	2.49	1.07	2.29	1.20

instructor feasibility assessments were lower than trainees' ratings. Those incentives where instructors' ratings were more than half a scale unit lower than trainees' ratings were: time off, not failing, opportunity to cross-train, relax curfew, press release to hometown paper, wearing civilian clothes to class, social event, honor dorm, freedom from instructor's supervision, freedom from classroom exercises, party for top performers, and being able to teach a class. However, for some incentives, particularly those connoting social behaviors, instructors' feasibility ratings exceeded trainees'. Incentives for which instructors' ratings were half a scale unit, or more, higher were: being treated as an individual, being liked and accepted, interacting with instructor, recognition for achievements, being concerned for trainees, and early notification of base assignment. It therefore seems that where feasibility discrepancies existed, instructors tended to view classroom-activity and regulatory-administrative incentives as less feasible, and interpersonally social incentives as more feasible, than did technical trainees.

Instructors perceptions of ideal leadership climate had a bearing on their estimates of the feasibility of a limited number of incentives. To the extent the instructor thought he should be considerate, he considered extra instruction ($r = .42$), display of work ($r = .38$) and treating people as individuals ($r = .40$) as more feasible, and implementing suggestions ($r = -.32$) and social events ($r = -.62$) as less feasible. Normative perceptions of structuring behaviors correlated positively with the feasibility of coeducational classes ($r = .40$) and negatively with self-pacing ($r = -.41$) and self-evaluation ($r = -.43$).

Secondary Incentive Analysis at Lowry Air Force Base

A follow-up study was conducted during the first phase of the research at Lowry AFB. It served the following purposes: (1) refinement and further analysis of incentive characteristics; (2) examination of incentives and the training environment where an experimental incentive system was most likely to be implemented; and (3) cross-base and training program comparisons of incentive characteristics.

The research approach was generally the same as that previously reported. Questionnaires were administered to technical trainees and instructors, and structured conversations were conducted with instructors and course administrators. In this phase of the study, one training course was intensively examined--the fundamental electronics course in the avionics training department. Samples consisted of 161 trainees and 38 instructors.

The content of the questionnaires differed in several respects from those administered at the previous four bases. For both trainees and instructors, only one form of the survey was used, since the number of incentives studied was reduced from 62 to 27. The specific incentives and their manner of selection are described in detail in the following section. The trainees' questionnaire included four measures:

(1) Incentive attractiveness-rating method. This measure was the same as that included in the earlier questionnaire, the 7-interval attractiveness rating scale for the 27 incentives. Incentives were randomly distributed on the questionnaire so as not to be in order of previously determined attractiveness or feasibility.

(2) Incentive attractiveness-dollar method. The general format of this measure was also the same as the earlier form, except that the measure was split into three parts, containing 9 incentives each, with $100 to distribute among each of the three sets. Incentives were assigned to the three parts so as to equate the expected value across parts, based on mean dollar values attributed to those incentives in the study of the four other bases. Further, the range of attractiveness was equally represented in the three parts by systematically assigning high, moderate, and low attractiveness incentives to each form. Similar incentives (e.g., press releases to base and home papers) were put on different forms. The number of incentives for each distributive task was reduced to make the task more feasible and the data more reliable.

(3) Description of social reinforcement activities. Trainees indicated their perceptions of the extent to which social reinforcement behaviors actually did occur, and (normatively) should occur in training. They responded on 5-interval frequency scales (never-always) on the "now" and "should" dimensions for 12 behavior items. These items represented six behaviors with trainee being the agent or recipient of the reinforcement (e.g., "Someone gives encouragement to you;" and "You give encouragement to someone else."). The other five behaviors were:

being treated as an individual, praising achievements, demonstrating liking and acceptance, exercising influence over what goes on in class, and showing concern.

(4) Personal background. This modified form of the earlier information form included: (a) sex, (b) race, adding the category "Mexican-American," (c) rank, (d) age, (e) years and months in Air Force, (f) current training course, (g) number of weeks (instead of blocks) in course, (h) training specialty, (i) volunteer status, (j) marital status, (k) number of dependents, (l) hometown, state, and population; and (m) education, with addition of the category "junior high school (grade 8)."

The instructors' questionnaire consisted of five measures:

(1) Incentive feasibility. Instructors responded on the previously described 5-interval scale of the extent (chance) that each of the 27 incentives could be made to depend on trainee effectiveness.

(2) Attitudes toward training instructor role. This measure involved 12 opinion statements with five response categories ranging from "strongly agree" to "strongly disagree." The items focused on autonomy, rewards, administration burden, commitment to incentive systems and to experimentation in general, and job satisfaction.

(3) Instructor Opinion Questionnaire. This was the measure of leadership climate administered in the same way at the other four bases.

(4) Personal background. This form was also very similar to the earlier questionnaire with minor adjustments in response categories.

(5) Instructor incentives. Instructors responded on the 7-interval attractiveness rating scale with reference to ten potential incentives they might receive for participating in training research projects. Ten additional scales were provided for respondent-generated incentives. The incentives which were rated by all instructors were: freedom from some squadron detail, time off (e.g., pass), freedom from some administrative duties, choice of teaching shift, ability to participate in a critique of the research project, certificate for participation, social event, freedom from policy changes during project, name posted as participant in training research, and participating in decision to continue the new training system.

The Lowry trainee and instructor questionnaires are included in this report as Appendices H and I.

Incentives Analyzed in Lowry Re-administration of the Survey

The reduction of the original set of 62 incentives to the 27 included in the Lowry electronics training survey was based on a

combination of five judgmental criteria. Some of these judgments were based on empirical data from the first survey; others involved group decisions by the research team. The five factors determining incentive selection were: (1) incentive attractiveness, (2) agreement across methods of attractiveness measurement, (3) feasibility estimates from instructors and trainees, (4) feasibility judgments of researchers and Air Force sponsors, and (5) incentive redundancy.

The 30 rejected incentives and the reasons for their rejection are displayed in Appendix J. The 27 incentives incorporated in the second survey are reported in Table 23, along with a summary of their scaling characteristics from the first survey. Many of the incentives were changed relative to their original statement, for example, "Being able to choose the uniform you wear to class" instead of "wearing civilian clothes to class," and "serving as a tutor in remedial instruction" instead of "helping classmates learn material." These changes in wording were intended to make them more specific and meaningful, to make them more realistic in the military training context, to possibly alter the perceived attractiveness of some where wording may have decreased their value, and to separate "compound" incentives such as "smoking and drinking," and "time off" into specific behaviors or outcomes such as smoking, drinking, 72 hour pass and 24 hour pass. In one instance, this procedure was reversed by incorporating the posting of pictures and names of honor, and most improved, students into one incentive, "your picture and name..." Finally, based on its successful utilization in recent research (Pritchard, Von Bergen, and DeLeo, 1974), one new incentive was added; i.e., a "walker's pass," or as phrased here, "Being able to proceed at own pace (not in formation) to and from class." For these changes and additions, the original survey data were no longer descriptively applicable, as indicated by "N/A" in the table. The incentives in the questionnaire included some of those with low as well as high attractiveness and feasibility ratings so as to anchor both ends of the distributions.

An additional six social incentives were incorporated in this analysis, but not in the manner in which they had been considered in the first questionnaires. Giving encouragement, treating others as individuals, recognizing others' achievements, showing liking acceptance, social interaction, showing concern, and influencing the class were reconsidered as social behavior bases upon which some incentives could be made contingent, and they were included in the separate measure of activity frequency previously discussed.

To further investigate social leadership behaviors operating in the classroom, trainees and instructors completed an additional questionnaire, the Leadership Behavior Form (Appendix K). This form contained instructions to generate as many "critical incidents" of leadership behavior as possible, using examples of social leadership categories and specific incidents developed by the researchers. The six behavior categories listed above were included, as well as "helping others solve problems," "increasing togetherness," "initiating

Table 23

Summary Characteristics of Incentives Included in Second Survey at Lowry AFB

Incentive	Rated Attractiveness	Instructor Feasibility
Having some choice in your permanent base assignment	6.46	3.62
72 hour pass	N/A	N/A
24 hour pass	N/A	N/A
Free 5-minute phone call to any location	6.21	2.60
Reduced squadron details	6.09	3.29
Promotion immediately after training	6.08	3.80
Getting information about civilian occupations related to your specialty	6.02	3.58
Getting further information about your military assignment	5.89	3.08
Ribbon for outstanding training performance	5.83	3.42
Getting extra advanced instruction in your specialty	5.75	3.46
Having a letter of merit sent to your family	5.65	3.21
A certificate for class achievement	5.51	3.98
Being able to smoke in class	N/A	N/A
Being able to drink soda pop or coffee in class	N/A	N/A
Talking over your strengths and weaknesses with your instructor	5.34	3.27
Taking a field trip to a place or other training course of interest to you	5.32	3.10
Being able to choose the uniform you wear to class	5.17	1.92
Planning and attending a social event off base	5.07	2.21
Being recommended as a future instructor	4.89	3.21
Having your accomplishment noted in the base newspaper	4.58	3.01
Having your accomplishment noted in your hometown newspaper	5.18	2.71
Serving as a tutor in remedial instruction	5.50	3.21
Having your name and picture posted for your class achievement	N/A	N/A
Having the identity of honor students passed to next duty instructor	4.51	3.40
Having a choice of where you will eat your meals	4.43	2.20
Being selected as a rope	4.18	3.05
Being allowed to proceed at own pace (not in formation) to and from class	N/A	N/A

friendships," "keeping a class moving toward goal accomplishment," etc. Respondents wrote brief descriptions of positive (favorable) and negative social leadership incidents they had observed in technical training. Results and utilization of the leadership behavior elements of the study will be discussed in a later section of this report.

Results of Lowry Study

Sample Characteristics

Individual characteristics of the sample of Lowry trainees are summarized in Table 24. The differences between the Lowry trainees and those sampled from the other four technical training bases were that with the Lowry sample: (a) trainees were homogeneous with respect to training course (electronics); (b) a greater proportion of trainees were married (40 percent of the sample); (c) more trainees had a college education; and (d) fewer trainees had volunteered for their training specialty (68 percent as contrasted with 81 percent from other bases). These differences can be seen by comparing the data in Tables 2 and 24.

Table 24

Characteristics of Lowry Trainee Sample (N = 161)

Variable		Frequency	Percent
Sex:	Male	161	100
	Female	0	0
Race:	White	147	91
	Black	9	6
	Mexican-American	4	2
Rank:	Airman	144	90
	Sergeant	15	9
Experience:	< 6 months	142	88
	> 6 months	19	12
Volunteer:	Yes	109	68
	No	52	32
Marital status:	Single	95	59
	Married	65	40
	Divorced	1	1
Education:	High school	77	48
	Some college	74	46
	College degree	6	4

Incentive Attractiveness and Feasibility

The major results of the study of incentive characteristics at Lowry are presented in Table 25. This table gives the means and

Table 25

Characteristics of Incentives for Trainees: Lowry Sample

	Rated Attractiveness			Dollar Attractiveness			Instructor Feasibility		
	M	sd	M'	M	sd	M'	M	sd	M'
Some base choice	6.66	0.67	6.46	51.83	26.20	56.75	3.84	0.97	3.62
Promotion after training	6.57	0.82	6.08	49.99	25.59	64.61	3.55	1.18	3.80
Walker's pass	6.11	1.19	N/A	16.26	17.20	N/A	2.47	1.35	N/A
Information, military	6.02	1.02	5.89	20.41	19.66	16.46	3 42	1.24	3.08
Reduced squadron detail	5.96	1.17	6.09	12.06	19.59	15.65	3.43	0.99	3.29
72 hour pass	5.92	1.15	N/A	15.02	19.18	N/A	3.24	1.28	N/A
Information, civilian	5.91	1.09	6.02	17.77	18.83	9.26	3.71	0.96	3.58
Advanced instruction	5.79	0.99	5.75	12.76	13.01	13.68	3.16	0.95	3.46
Field trip	5.61	1.21	5.32	9.33	13.81	9.23	3.63	0.91	3.10
Ribbon	5.58	1.28	5.83	9.94	11.82	8.15	2.79	1.19	3.42
Phone call	5.48	1.32	6.21	9.88	12.30	32.16	2.03	1.13	2.60
24 hour pass	5.46	1.25	N/A	9.43	10.69	N/A	3.05	1.20	N/A
Certificate	5.40	1.10	5.50	5.80	7.07	11.75	3.76	1.20	3.98
Strengths, weaknesses	5.22	1.15	5.34	5.19	6.45	16.04	3.42	1.18	3.27
Drink in class	5.20	1.54	N/A	5.84	7.96	N/A	2.03	1.10	N/A
Choice of uniform	5.08	1.32	5.17	6.24	7.48	10.53	1.95	1.03	1.92
Choice of where to eat	5.07	1.23	4.43	3.65	9.17	3.35	2.39	1.20	2.20
Letter of merit	5.02	1.15	5.65	7.09	12.43	6.82	3.45	1.11	3.21
Honor students' identity	4.97	1.21	4.51	3.38	4.44	3.62	3.50	1.31	3.40
Social event	4.85	1.18	5.07	3.94	9.46	4.07	2.61	1.00	2.21
Hometown paper	4.84	1.32	5.18	4.29	8.13	3.91	3.37	1.26	2.71
Name and picture posted	4.45	1.02	N/A	1.60	2.85	N/A	3.05	1.01	N/A
Base paper	4.32	1.03	4.58	2.68	8.81	5.39	3.08	1.26	3.02
Smoke in class	4.29	2.21	N/A	5.12	8.77	N/A	2.35	1.09	N/A
Future instructor	4.25	1.66	4.85	5.45	9.74	5.77	2.92	1.04	3.21
Serving as tutor	3.95	1.49	5.50	2.73	8.85	6.57	3.53	0.98	3.21
Being selected as a rope	3.86	1.65	4.18	3.35	6.66	2.34	2.50	1.08	3.05

Note: M' refers to the mean assessments from the first study of four bases for those incentives where such a comparison is applicable.

standard deviations of trainees' attractiveness assessments and instructors' feasibility assessments, along with corresponding means obtained in the earlier four-base study.

Among the 27 incentives, 21 of which could be compared across studies, seven showed differential attractiveness between Lowry and the other bases. Three incentives were viewed as significantly more attractive by Lowry electronics trainees: promotion ($\underline{t}$ = 3.77), choice of where to eat meals ($\underline{t}$ = 3.82), and passing honor students' identity to next instructor ($\underline{t}$ = 3.67). Four incentives were rated as less attractive at Lowry: free phone call ($\underline{t}$ = 4.56), letter of merit to family ($\underline{t}$ = 3.93), recommendation as future instructor ($\underline{t}$ = 2.73), and serving as a tutor ($\underline{t}$ = 8.16). All of these differences, as determined by $\underline{t}$ tests for mean differences in large samples (N in study 1 = 200, N at Lowry = 160), were significant beyond the .01 level of confidence. These differences cannot be unequivocally attributed to cross-study differences, since the samples differed in several respects. For example, the greater attractiveness of promotions might be due to higher education levels, and/or more trainees being married, and/or the nature of their training program. Moreover, five of these seven incentives involved substantial changes in phrasing across survey administrations. For example making promotions occur immediately after training may have increased the incentive value of promotions; specifying a tutorial service may have decreased the attractiveness of helping classmates as a general incentive. Of the two incentives for which wording was essentially the same, one showed higher attractiveness (passing on honor students' identity) and one showed lower incentive value at Lowry (future instructor).

Five of the incentives varied in perceived feasibility across the two studies. Two incentives were reported to be more feasibly tied to effectiveness by Lowry instructors: field trip ($\underline{t}$ = 2.41) and noting accomplishments in hometown papers ($\underline{t}$ = 2.30). Three incentives received higher feasibility ratings by instructors at the other four bases: free phone calls ($\underline{t}$ = 2.11), rope recommendations ($\underline{t}$ = 2.29), and ribbons for training performance ($\underline{t}$ = 2.33). Each of these differences, as determined by $\underline{t}$-tests for mean differences in small samples, with 68 degrees of freedom (N from four bases = 32, N for Lowry = 38), was significant at $p < .05$. Again, two of these changes might be accounted for by differences in incentive wording. Field trips were changed to include other training specialty locations as destinations, and phone calls were specified as being to any location and of five minutes' duration.

It should also be noted that incentive attractiveness and feasibility were not highly interrelated. The rank-order correlation coefficient between trainees' attractiveness ratings and instructors' feasibility ratings was +.34 across the 27 incentives. With this limited number of incentives, it was also the case that the rating and dollar methods of incentive value determination generated very high between-method agreement (rho = +.92).

Instructor Attitudes, Incentive Feasibility, and Instructor Incentives

In assessing incentive feasibility, the Lowry instructors provided further information about their job attitudes and potential incentives for instructors. Their extent of agreement with the 12 job opinion statements is presented in Table 26. Instructors agreed most with statements that incentives are likely to improve trainees' morale and performance, that their job is satisfying, and that they like to experiment with new approaches. They responded with moderate disagreement to statements reflecting instructor autonomy, reward possibilities, and having too much administrative work. Among these attitude statements, the only two which were related to instructors' overall job satisfaction (last item) were autonomy in teaching classes ($r = .39$, $p < .05$) and having a variety of job activities ($r = .42$, $p < .01$). It is also of interest to note that: (1) while instructors did not feel they had too much administrative work (M = 2.89), they did indicate slight agreement with having excessive paperwork (M = 3.53); and (2) they indicated equal degrees of belief that incentives would favorably affect both the morale and performance of trainees.

Table 26

Instructor Attitudes Toward Their Job

Opinion Statement	Mean	sd
Teaching autonomy	2.76	1.26
Rewards for teaching well	2.45	1.06
Variety of activities	3.10	1.03
Excessive paperwork	3.53	0.98
Incentives improve morale	4.08	0.85
Incentives improve performance	4.08	0.59
Too much administrative work	2.89	0.86
Extra time with slower students	3.18	0.80
Extra time with best students	3.08	0.91
Like to experiment	3.66	0.75
Instructor's job is difficult	3.47	1.01
Instructor's job is satisfying	3.84	0.92

These instructor attitudes were, in some instances, related to their perceptions of the feasibility of typing incentives to trainees' performance. Incentive feasibility was especially frequently related to instructors' willingness to spend time with slower students. To the extent instructors were willing to spend that extra time, they judged the following incentives more feasible:[1] certificate for achievement

[1] With N = 38 instructors, correlations of .31+ are significant at $p < .05$, and correlations of .0 + are significant at $p < .01$.

(r = .53), recommendation as future instructor (.35), 72-hour pass (.31), reduced squadron details (.34), selection as a rope (.36), noting accomplishment in base paper (.31), posting names and pictures (.42), passing on honor students' identity (.45), and noting accomplishments in hometown newspaper (.33). Further attitude correlates of feasibility included attitudes toward experimentation and incentive systems. Willingness to experiment with new approaches was related to the feasibility of ribbons for performance (r = .40). To the extent intructors thought incentives would improve morale, they viewed the following incentives as more feasible: reduced details (.37), ribbons (.36), talking over strengths and weaknesses (.32), field trip (.32), and noting accomplishments in home town paper (.32). The feasibility of the home town paper, field trip, and certificate incentives also correlated with opinions that incentives would improve performance (correlations of .51, .41, and .41, respectively). The instructors' perceived job difficulty correlated inversely with the feasibility of providing trainees with extra information regarding military assignments. The instructor's overall satisfaction with his role was not related to incentive feasibility judgments. Thus, in general, it seems that liberal instructor attitudes toward trying out new training approaches, and toward possible beneficial effects of incentive systems, and toward commiting their time to slow-learning trainees are closely related to their perceptions of the feasibility of implementing particular training incentives.

Since instructor attitudes vary and participation in research involves some sacrifice on their part, instructors were also queried about potential incentives for them to participate. Table 27 lists instructor incentives in their order of rated attractiveness. The preference ordering shows a consistent pattern. The most attractive incentives involved the instructor's duty role (choice of shift and time off). These were followed in attractiveness by incentives denoting influence over the research project (critique, and participating in decision to implement). Next in attractiveness were three incentives involving freedom from administrative burdens. Incentives involving individual recognition (certificates and posting participants' names) were lower in attractiveness, and the least attractive incentive (which was neutral in attractiveness) was participation in a social event.

Interestingly, the degree to which instructors felt rewarded for effective teaching was not related to incentive attractiveness. However, other opinion dimensions were associated with instructor incentive value. Perceptions of teaching autonomy were negatively correlated with the attractiveness of having one's name posted (r = -.45), being able to critique the project (-.33), and receiving a certificate (-.31). Beliefs that incentives were conducive to trainee morale and performance were positively related to the value of certificates (r = .31 for the morale statement, .35 for performance) and having one's name posted as a participant (r = .45 and .47). To the extent instructors were administratively overworked, they judged freedom from administrative burdens to be attractive (r = .41). A general willingness to experiment with new ideas was a particularly interesting correlate of instructor incentives.

Table 27

Attractiveness of Incentives to Instructors

Incentive	Mean	sd
Choice of teaching shift	6.30	0.94
Time off (e.g., pass)	5.78	0.98
Critique research project	5.50	1.08
Participate in decision on new system	5.47	0.89
Freedom from some squadron detail	5.44	1.05
Freedom from some administrative duties	5.35	0.95
Freedom from policy changes during project	5.34	1.07
Certificate for participation	4.89	0.95
Name posted as participant	4.58	1.00
Social event	4.32	1.03

Such willingness was negatively correlated with the attractiveness of reduced instructor squadron details (r = -.36), but positively related to the value of participating in a critique of the project (r = .35) and in the decision to implement its results (r = .37). In other words, those instructors open to experimentation seem more concerned with direct involvement in that experimentation than with personal extrinsic incentives to participate.

The value of incentives to instructors was not related to their judgments that analogous incentives would be feasible for trainees. That is, correlations between the attractiveness of reduced details for instructors and the feasibility of reduced details for trainees (and similarly for passes, certificates, posting names, and social events) were negligible.

Further Feasibility Judgments

An additional subjective assessment of incentive feasibility was obtained by asking the chief administrator of the electronics training course to indicate, with dichotomous "yes/no" responses, whether each of the incentives would be administratively feasible to implement in the training curriculum. Those incentives which were judged to encompass a potentially detrimental impact on the training branch were: getting extra advanced instruction in your specialty, being able to smoke in class, and being able to drink pop or coffee in class. The first incentive was perceived to conflict with acceptable instructor supply and demand ratios; the latter two incentives would be impossible to implement in classrooms with sensitive electronics equipment.

At this point, further feasibility judgments were rendered, by the research team, concerning the implications of implementing the incentives contingent on classroom behavior. Rather than being continuously

available in a "token economy" system, several incentives were considered to be meaningfully deliverable only once during a training course. These incentives were: promotion and certificate (to be administered late in the course), some choice in base assignment (to be administered early), information about military assignments, information about related civilian occupations, letter of merit, and selection as a rope. The field trip incentive was judged to be applicable to groups or classes as a whole, rather than to be available to specific individuals.

Development of Incentive Systems[2]

The Basic Systems

The development of social incentive systems emanating from the research on characteristics of incentives involved two basic components, delineating the system of incentive operation, and selecting the incentives to be included in the system.

Four incentive systems were developed based on two critical variables which may affect the utility of incentives: the source of their administration and the basis on which they are awarded. The four incentive systems can be basically described as follows

System 1. Incentives are administered by the instructor based on the individual trainee's performance.

System 2. Incentives are administered by the instructor and the class as a group based on the individual's performance.

System 3. Incentives are administered by the instructor to the individual based on the performance of the class as a group.

System 4. Incentives are administered by the instructor and the class based on the performance of the class.

The experimental variables incorporated in these systems; i.e., incentive administration and behavioral basis, were derived from previous evidence suggesting differential impacts. Our review of the literature provided tentative indications that basing rewards on group performance may be efficacious in view of the intervening processes of cohesiveness development and helping others reach performance standards (Raben, et al., 1973). That review, along with present data from four Air Force technical training bases, also suggests that trainees may respond differentially to incentives administered by their instructor (leader) and classmates (peer group).

Behavioral Basis of Reinforcement

The distinction between individual- and group-performance-based reinforcement is relatively straightforward. Rewards are administered

[2]While the incentive systems proposed were not experimentally implemented, they are presented in outline form for future investigation by the Human Resources Laboratory. Due to several changes in approach, the social incentives were eventually incorporated into a study of classroom social leadership and its effects. The nature of that study and attendant problems will be documented in the AFHRL-TR-75-11

based on the individual's own performance, in terms of either an absolute cut-off score or exceeding an individually predicted target score (based; e.g., on his aptitude test scores), or the individual is rewarded based on the overall performance of his class. The proposed systems included the absolute cut-off criterion and a minimal failure-rate on the part of the class. Thus, for example, a trainee could be rewarded in proportion to the number of points he scored above 70 on a block (performance) exam, so long as no more than ten percent of his classmates failed the test. To this point, the major criterion behavior is, then, objective performance, as measured by standardized examinations.

The issue of administrative source generated the inclusion of multiple behavior bases for reinforcement. In addition to objective block-exam performance, the trainee could be rewarded for his leadership performance with a system of determining "leadership bonus points" to supplement (but not replace) 'performance points." The varying source of administration is operationalized in terms of whether the instructor alone, or the instructor in concert with classmates allocates the leadership bonus points. In their combination, a ratio of 2:1 is preserved between performance and leadership points, so that the former behavior base is weighted twice as heavily in determining rewards. The range of possible performance points is 0-30 (based on test scores of 70-100). Previous data from electronics courses indicated a mean test score of 90. This would represent a mean of 20 performance points. Thus, we would establish a mean of 10 leadership points for a trainee to earn. If class size were, for example, 10, then each student and the instructor would distribute 100 leadership points among class members in amounts ranging from 0-15 points for any student. The average allocation a trainee receives from class members is then added to his instructor-allocated points. The average of these two scores (instructor and class) provides the final number of leadership points for trainees operating in the instructor and class conditions (systems 2 and 4). In the other systems, only the instructor assigns leadership points. Finally, if we assume the experimental systems to incorporate the first four blocks of the course, the total number of points an individual could earn would be 180: 30 x 4 = 120 performance points, and 15 x 4 = 60 leadership points.

Since, unlike the performance points, leadership point determinations involve subjective judgments, a study and experimental definition of leadership behavior was accomplished as part of the Phase I research activities. The intent was to provide trainees and instructors with behavior-observation reasons for assigning leadership status to the trainees. The determination of relevant leadership behaviors capitalized on the analysis of social incentives in training and the generation, by trainees and instructors, of critical incidents of leadership behavior.

Six social incentives, which had previously been considered as potential rewards, were redesigned as social leadership bases for the

determination of rewards and studied with the sample of Lowry electronics trainees. Trainees indicated on 5-point scales (never-always) the frequency with which these behaviors presently occur, and ideally should occur, in their training program. The behaviors were also studied with the variation of the respondent-trainee as an initiator or recipient of the leadership act.

Results of this analysis are presented in Table 28. The mean responses of trainees are indicative of several general conclusions. (1) Social leadership behaviors are currently operative in the training setting, some (treating people as individuals and showing liking and acceptance) with substantial regularity. (2) Trainees believe that social leadership behaviors should occur more frequently than they currently do; this result was consistent across the six behaviors. (3) Trainees believe, to a slightly greater extent, that they should (and do) initiate the leadership acts, than that they receive the act from someone else. It should be noted that the exercise of influence cannot be interpreted in the usual sense of the respondent as a target, since the questionnaire items stated that the trainee influences class activities, or someone else influences those activities.

Table 28

Trainee Perceptions of the Degree of Present and Ideal Occurrence of Leadership Behaviors, with the Trainee as Agent and Target of the Leadership Behavior

	Trainee as Agent				Trainee as Target			
	Present		Ideal		Present		Ideal	
Behavior	M	sd	M	sd	M	sd	M	sd
Give encouragement	2.95	0.75	3.65	0.77	2.70	0.87	3.43	0.67
Treat as an individual	4.16	0.76	4.56	0.64	3.54	1.01	4.44	0.71
Praise achievements	3.11	0.71	3.60	0.74	2.69	0.93	3.28	0.78
Show liking, acceptance	3.65	0.67	3.84	0.77	3.43	0.70	3.54	0.71
Exercise influence	3.16	0.87	3.31	0.82	2.89	0.99	3.29	0.82
Show concern	3.34	0.73	3.69	0.79	3.01	0.83	3.34	0.81

The derivation of critical leadership incidents supplemented these categorical descriptions of classes of social behaviors and would provide instructors and trainees with exemplary objective markers for distributing leadership points, assuming, for the present, equal importance of the behavior classes in defining social leadership. Examples of incidents for the leadership behavior classes are provided in Appendix K

of this report. They, in fact, became the basis for a Leadership Recognition System implemented in Phase II of the research.

Incentives Available in the Systems

Incentives for technical and leadership performance were selected on the basis of their characteristics, as determined in their identification and analysis, and their manipulability within the context of the proposed systems. These issues determined the pricing of incentives in terms of the performance/leadership points necessary to acquire them as rewards. Considerations of incentive attractiveness, feasibility, frequency of realistic receipt, and cost of implementation led to the proposed inclusion of 18 incentives to be available in the systems' catalogs or menus. The proposed incentives and their values are presented in Table 29. The incentives are listed in the order of their attractiveness as assessed by the dollar method in the study of electronics trainees at Lowry AFB. Rating-method attractiveness values are also presented and show a close ordinal correspondence to the dollar values. The incentives are presented in five levels of value, as indicated by the spacing between incentive clusters in the table. Within each level, the incentives have the same behavioral-points value indexing their "price" or the number of exam/leadership points which must be accumulated to receive those incentives. The price was generated by multiplying the median, within-level, dollar value of the incentives by two. The incentive prices are thus tied directly to their psychological reward value to the trainee and preserve several desirable elements of the incentive systems. First, the prices of the lower-level incentives guarantee that virtually every trainee can be rewarded. Even without leadership points, scoring 78 on an exam (or averaging 72 across 4 tests) would qualify one for a reward. Second, the top-level incentives are very costly in terms of both their system price and the implementation cost for the Air Force, and very few trainees are likely to earn them. Moreover, since trainees must "stockpile" points over blocks, they must consistently maintain high performance/leadership levels and must forego some lower-level incentives in the early training blocks. Scoring 90 on all four block exams, one would have to average five leadership points per assessment to qualify, if he purchased no other incentives along the way. With perfect (100) exam scores and 10 leadership points per block, if the trainee opted for one of these top incentives, he could purchase only one other second-level, 3 third-level, or 5 second-level incentives. In no case could a trainee obtain both a promotion and choice in his base assignment. Third, half of the incentives can be purchased only once in the system, and these "one-shot" rewards occur at each price level. The remaining incentives in levels 2-5 can be acquired regularly throughout the time period of the system. Receipt of six of the nine one-shot incentives is also reserved for the last training block due to their cost, or realistic administration (of field trips, social events, certificates, and passing honor students' identities to next instructor). Fourth, the proposed systems incorporate incentives with motivational implications for recognition, time-off and individual control, and social activities.

Table 29

Incentives Proposed for Inclusion in the Social Incentive Instructional Systems

Incentive	Attractiveness		Points Needed to Acquire	Frequency of Purchase
	Dollar	Rating		
Level I				
Choice in base assignment	52	6.7	100	once--last block
Promotion	50	6.6	100	once--last block
Level II				
Information--military	20	6.0	32	once
Information--civilian	18	5.9	32	once
72-hour pass	15	5.9	32	multiple
Extra instruction	13	5.8	32	multiple
Reduced squadron details	12	6.0	32	multiple
Level III				
Phone call	10	5.6	18	multiple
Field trip	9	5.6	18	once--last block
24-hour pass	9	5.5	18	multiple
Level IV				
Letter of merit	7	5.0	12	once
Certificate	6	5.4	12	once--last block
Uniform choice	6	5.1	12	multiple
Meals choice	6	5.1	12	multiple
Strengths/weaknesses	5	5.2	12	multiple
Level V				
Social event	4	4.8	8	once--last block
News in home town paper	4	4.8	8	multiple
Honor identity passed on	3	5.0	8	once--last block

The basic elements of the incentive instructional systems would involve examining performance and attitudes over four blocks of time periods of the fundamental electronics course for trainees operating in one of the four incentive systems. Incentives would be used to reinforce both technical skill acquisition and the development of leadership skills in training. Thus, the social aspect of the systems is included both in the incentives and their behavioral contingencies. The major emphasis is on social leadership behavior development, since such social behaviors as "treating others as individuals" are difficult to conceptualize as rewards. Rather, technical and social competence are viewed as goals of an incentive system. The criterion measures for evaluation would include block exam scores, performance ratings by instructors (see Appendix L), and measures of trainees' attitudes (Appendix M). These measures are discussed in more detail in the final research report, AFHRL-TR-75-11.

Summary and Conclusions

As the first phase of a research program to explore incentive systems for the development and maintenance of social and learning behaviors in Air Force technical training, potential rewards were identified and studied in the technical training environments of five bases. This preliminary research was designed to determine rewards which would function as meaningful incentives for trainees to learn quickly and competently, and to maintain favorable attitudes toward their roles, and which would be feasible to implement in a behavior-contingent reward system. Further, the study examined variables associated with the organizational environment and the participants in the system, which might affect the utility social reinforcement.

Sixty-two potential incentives were initially identified through discussions with training personnel, intensive literature reviews, and idea-generation by the research staff. Data pertinent to the characterization of the incentives was obtained through systematic questionnaire administrations to 463 trainees and 102 training instructors at the five technical training bases in Texas (2), Louisiana, Illinois, and Colorado. These administrations were phased so that initial investigation occurred at four bases, and a refined follow-up study was conducted at the fifth base where an experimental incentive system would later be implemented.

The major results of the research and conclusions concerning training incentives can be summarized as follows:

(1) The perceived attractiveness or psychological reward value of incentives varies greatly although very few are considered unattractive. The range of variation is restricted to the neutral-to-extremely attractive portion of the rating measurement scale. In a very general way, the more attractive incentives were those with direct impacts on the trainee himself and his future career and with administrative cost implications. The less attractive incentives involved public recognition and identification with superiors.

(2) Multiple methods of measuring incentive value showed substantial agreement, especially when the number of incentives to be judged was not excessive. Anchoring attractiveness to dollar judgments of their relative worth incentives seems a plausible measurement technique with subsets of ten or fewer incentives being described simultaneously by the judge.

(3) Factor analyses of incentive attractiveness ratings indicated several dimensions or categories of incentives including recognition as the major factor in the present set of incentives, and secondary dimensions of personal freedom, self-development, social behaviors, and information-feedback.

(4) Incentive value judgments can to some degree be predicted by assessing the characteristics of potential recipients and their training environment and background. Particularly strong and consistent correlates of incentive attractiveness included the trainees' sex, race, marital status, and personal motives, and the leadership climate of his immediate training environment. Incentives with direct implications for social behavior reinforcement were more attractive to females. Black trainees evidenced preferences for recognition-related incentives, while white airmen preferred control and future career oriented rewards. Married trainees viewed a diverse set of incentives as more attractive than did single trainees. Incentive preference patterns were differentiated by individual motives, especially recognition motives; motives to exercise power, to affiliate, and engage in altruistic behaviors were also related to preferences for incentives which would facilitate attainment of the respective motivational goals. Leadership climate dimensions of consideration and initiation of structure were also related to preferences for many different incentives, although the basis for these relationships might involve climate-related deprivation of rewards which makes them salient, as well as incentive preferences being fostered by a climate in which they would be effective motivational stimuli.

(5) The value of incentives depends in part upon the agent of their administration. While several recognition-related rewards were more highly valued when the instructor serves as the reinforcing-agent, the lack of reinforcing-agent differences for other social incentives suggests that peer reinforcement may be an effective delivery component of incentive systems stressing social reinforcement.

(6) Incentive feasibility, in terms of the extent to which they could be implemented and tied to classroom effectiveness varied across incentives with the majority being viewed as somewhat feasible. Trainees' judgments of feasibility were related in many instances to their attractiveness ratings. Instructor-student agreement on incentive feasibility was quite high. Instructors' judgments were related to their attitudes toward experimentation in their jobs, their willingness to spend time with students, and their general attitudes toward incentives for learning. Instructors' job attitudes were also related to their expression of preferences for instructor incentives to participate in research. The instructors' feasibility judgments of a few incentives were also associated with their perceptions of ideal instructor behaviors or leadership climate.

(7) Four experimental incentive systems were proposed with variations in the basis for reward (individual or class performance) and source of incentive administration (instructor or instructor and peer classmates). The systems were designed to reinforce technical learning and social leadership behaviors, and include 18 incentives priced on the basis of their attractiveness to trainees, feasibility judgments of instructors and training staff, and cost of implementation. Comparative evaluations of system efficacy can be made with reference to resulting performance (examinations, time taken in training) and trainee attitudes.

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APPENDIX A

SURVEY OF ATTITUDES AND OPINIONS OF
AIR FORCE TECHNICAL TRAINEES--FORM A

For the next period you will be asked to complete eight (8) questionnaires contained in this booklet. The general purpose of this task is to gather information about the opinions of people in Air Force training programs concerning several aspects of the training environment and themselves. This is part of a research project being conducted by The Ohio State University and sponsored by the Air Force Human Resources Laboratory. The project will examine the motivation of personnel and characteristics of the training setting with the goal of establishing high performance in, and attitudes toward technical training.

Specific instructions are provided for each of the eight (8) parts of this booklet. Please read them carefully before completing the questions in each part. If you have questions, feel free to ask the person administering the booklet to you. This is a survey of opinions, not a "test" of any sort with right and wrong answers. We are interested only in your complete and honest opinions and judgments.

Thank you for your cooperation and assistance

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Michael T. Wood and

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Richard J. Klimoski
Project Directors

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PART I

This first section of the questionnaire asks for your opinions on the degree of attractiveness, to you, of several possible outcomes of performing well in training. Place an X in the column which best describes the attractiveness of each outcome to you. An X in the extreme left means: "This outcome is extremely attractive to me; I would expend my maximum effort to obtain this." A mark in the extreme right means: "This outcome is extremely unattractive to me; I would expend my maximum effort to avoid this." A mark in the middle means: "This outcome is neither attractive no unattractive to me; being able to obtain or avoid this would not affect my effort at all." For each outcome listed below, mark any one of the seven spaces. Indicate your own judgment of the attractiveness of each of these outcomes. Do not skip any of the outcomes listed.

Outcome	Extremely Attractive	Very Attractive	Somewhat Attractive	Neither Attractive Nor Unattractive	Somewhat Unattractive	Very Unattractive	Extremely Unattractive
Verbal praise.	[	[	[	[	[	[	[
Choice of permanent base assignment.	[	[	[	[	[	[	[
Opportunity to cross-train.	[	[	[	[	[	[	[
College credit for technical training. . .	[	[	[	[	[	[	[
Co-ed classes.	[	[	[	[	[	[	[
Time-off (Additional leave).	[	[	[	[	[	[	[
Progressing through course at own pace. .	[	[	[	[	[	[	[
Interaction with instructor during class. .	[	[	[	[	[	[	[
Reduced squadron detail.	[	[	[	[	[	[	[
Freedom from instructors' supervision.	[	[	[	[	[	[	[
Being in honor dorms. .	[	[	[	[	[	[	[
Being able to help classmates learn material.	[	[	[	[	[	[	[
Smoking and drinking coffee in class when possible.	[	[	[	[	[	[	[
. . . . .	[	[	[	[	[	[	[

PART I-A continued.

Outcome	Extremely Attractive	Very Attractive	Somewhat Attractive	Neither Attractive Nor Unattractive	Somewhat Unattractive	Very Unattractive	Extremely Unattractive
Receiving ribbons for outstanding performance.	[	[	[	[	[	[	[
Wearing civilian clothes to class.	[	[	[	[	[	[	[
Press release to hometown newspaper. . . .	[	[	[	[	[	[	[
Relaxation of curfew restrictions.	[	[	[	[	[	[	[
Extra, advanced instruction.	[	[	[	[	[	[	[
Pictures and names of honor students posted.	[	[	[	[	[	[	[
Additional information concerning related civilian occupations.	[	[	[	[	[	[	[
Display of completed work	[	[	[	[	[	[	[
Special seating in classroom.	[	[	[	[	[	[	[
Freedom from classroom exercises.	[	[	[	[	[	[	[
Being able to evaluate your own performance.	[	[	[	[	[	[	[
Receiving encouragement.	[	[	[	[	[	[	[
Choice of roomates. . . .	[	[	[	[	[	[	[
Being recommended as a future instructor. . .	[	[	[	[	[	[	[
Being able to set learning goals. . . .	[	[	[	[	[	[	[
Being treated as an individual.	[	[	[	[	[	[	[
Sending letter of merit to parents or loved ones.	[	[	[	[	[	[	[
Being taken to some social event during duty time.	[	[	[	[	[	[	[
Being chosen group spokesman	[	[	[	[	[	[	[

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PART II

In this part you are to consider the worth, to you, of each of several possible outcomes of performing well in training. Imagine that you have just received $300, which is about a month's pay for an airman third-class. Now, you cannot keep this money, but must spend it on "buying" from the list of outcomes below. Distribute the $300 among the outcomes to indicate how much you would spend for each, by placing an (exact) dollar amount on the line next to each outcome. You may assign anywhere from 0 to 300 dollars (including zero dollars) for any particular outcome. There are only two restrictions: (1) The total numbers of dollars you spend on all outcomes must equal $300, and (2) Do not use cents or fractions of a dollar. Check on your total when you finish. Feel free to make changes as you go, to make the total come out right.

_____ Verbal praise
_____ Ribbon for outstanding performance
_____ Choice of permanent base assignment
_____ Wearing civilian clothes to class
_____ Opportunity to cross-train
_____ Press release to hometown newspaper
_____ College credit for technical training
_____ Relaxation of curfew restrictions
_____ Co-ed classes
_____ Extra, advanced instruction
_____ Time-off (additional leave time)
_____ Pictures and names of honor students posted
_____ Progressing through course at own pace
_____ Additional information concerning related civilian occupations
_____ Interaction with instructor during class
_____ Display of completed work
_____ Reduced squadron detail
_____ Special seating in classroom
_____ Freedom from instructor's supervision
_____ Freedom from classroom exercises
_____ Being in honor dormitory
_____ Being able to evaluate your own performance
_____ Being able to help classmates learn material
_____ Receiving encouragement
_____ Smoking and drinking coffee and soda (pop) in class when possible
_____ Being recommended as a future instructor
_____ Being able to set learning goals
_____ Being treated as an individual
_____ Choice of roomates
_____ Sending letter of merit to parents or loved ones
_____ Being taken to some social event during duty time
_____ Being chosen as group spokesman

_____ TOTAL (Please check)

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PART III

Now consider the following outcomes. Indicate the extent to which you believe that each outcome presently depends on your performing effectively in the classroom. Place an X in one of the five (5) columns which best describes the relationship between your effectiveness and obtaining the outcome; do this for all of the outcomes.

Outcome	Being effective makes it impossible to obtain this outcome	Being effective makes it difficult to obtain this outcome	Being effective has nothing to do with obtaining this outcome	Being effective makes it easy to obtain this outcome	Being effective makes the attainment of this outcome a sure thing
Verbal praise.	[	[	[	[	[
Choice of permanent base assignment. . . .	[	[	[	[	[
Opportunity to cross-train.	[	[	[	[	[
College credit for technical training. . .	[	[	[	[	[
Co-ed classes.	[	[	[	[	[
Time-off (additional leave time).	[	[	[	[	[
Progressing through course at own pace. . .	[	[	[	[	[
Interaction with instructor during class. . . .	[	[	[	[	[
Reduced squadron detail.	[	[	[	[	[
Freedom from instructors supervision.	[	[	[	[	[
Being in honor dorms. . .	[	[	[	[	[
Being able to help classmates learn material. .	[	[	[	[	[
Smoking and drinking coffee in class when possible.	[	[	[	[	[
Ribbon for outstanding performance.	[	[	[	[	[

PART III - A continued. . .

Outcome	Being effective makes it impossible to obtain this outcome	Being effective makes it difficult to obtain this outcome	Being effective has nothing to do with obtaining this outcome	Being effective makes it easy to obtain this outcome	Being effective makes the attainment of this outcome a sure thing
Being chosen group spokesman	[	[	[	[	[
Wearing civilian clothes to class.	[	[	[	[	[
Press release to hometown newspaper.	[	[	[	[	[
Relaxation of curfew restrictions.	[	[	[	[	[
Extra, advanced instruction.	[	[	[	[	[
Pictures and names of honor students posted.	[	[	[	[	[
Additional information concerning related civilian occupations. .	[	[	[	[	[
Display of completed work	[	[	[	[	[
Special seating in classroom.	[	[	[	[	[
Freedom from classroom exercises.	[	[	[	[	[
Being able to evaluate your own performance. .	[	[	[	[	[
Receiving encouragement.	[	[	[	[	[
Being recommended as a future instructor. . .	[	[	[	[	[
Being able to set learning goals.	[	[	[	[	[
Being treated as an individual.	[	[	[	[	[
Choice of roomates. . . .	[	[	[	[	[
Sending letter of merit to parents or loved ones.	[	[	[	[	[
Being taken to some social event during duty time.	[	[	[	[	[

A

PART IV

Your task here is similar to part III, except that you are to place an X in the column that best describes the degree to which each outcome could be made to depend on performing effectively. That is, you should consider the potential likelihood that the outcome could be made to occur after effective classroom performance.

Outcome	There is no chance that this outcome could be made dependent on effectiveness	There is a small chance that this outcome could be made dependent on effectiveness	The chances are 50--50 that this outcome could be made dependent on effectiveness	There is a strong chance that this outcome could be made dependent on effectiveness	It is certain that this outcome could be made dependent on effectiveness
Verbal praise.	[	[	[	[	[
Choice of permanent base assignment.	[	[	[	[	[
Opportunity to cross-train.	[	[	[	[	[
College credit for technical training.	[	[	[	[	[
Co-ed classes.	[	[	[	[	[
Time-off (additional leave time).	[	[	[	[	[
Progressing through course at own pace.	[	[	[	[	[
Interaction with instructor during class. . . .	[	[	[	[	[
Reduced squadron detail.	[	[	[	[	[
Freedom from instructors supervision.	[	[	[	[	[
Being in honor dorm. . .	[	[	[	[	[
Being able to help classmates learn material. .	[	[	[	[	[
Extra, advanced instruction	[	[	[	[	[
Smoking and drinking coffee in class when possible	[	[	[	[	[
Ribbon for outstanding performance.	[	[	[	[	[
Wearing civilian clothes to class.	[	[	[	[	[

PART IV - A continued. . .

Outcome	There is no chance that this outcome could be made dependent on effectiveness	There is a small chance that this outcome could be made dependent on effectiveness	The chances are 50-50 that this outcome could be made dependent on effectiveness	There is a strong chance that this outcome could be made dependent on effectiveness	It is certain that this outcome could be made dependent on effectiveness
Press release to hometown newspaper.	[	[	[	[	[
Pictures and names of honor students posted.	[	[	[	[	[
Additional information concerning related civilian occupations. .	[	[	[	[	[
Display of completed work	[	[	[	[	[
Special seating in classroom.	[	[	[	[	[
Freedom from classroom exercises.	[	[	[	[	[
Being able to evaluate your own performance. .	[	[	[	[	[
Receiving encouragement.	[	[	[	[	[
Being recommended as a future instructor. . .	[	[	[	[	[
Being able to set learning goals.	[	[	[	[	[
Being treated as an individual.	[	[	[	[	[
Choice of roomates. . . .	[	[	[	[	[
Relaxation of curfew regulations.	[	[	[	[	[
Sending letter of merit to parents or loved ones.	[	[	[	[	[
Being taken to some social event during duty time.	[	[	[	[	[
Being chosen as group spokesman.	[	[	[	[	[

PART V

A

Consider a subset of the outcomes one final time and judge their attractiveness a little differently. First, indicate the attractiveness of each item as potentially administered (or given) to you by your instructor and place an I (for instructor) in a space on the line that best represents your feelings. Then, for the same item place a C (for class) on the scale at the point which reflects how attractive the outcome would be if administered (or given) to you by your classmates as a group. Note: It is possible for an outcome to be equally attractive coming from an instructor or a class, in which case both the C and the I would be placed in the same space. Now, please judge all the outcomes listed below. Do not skip any outcome.

Outcome	Extremely Attractive	Very Attractive	Somewhat Attractive	Neither Attractive Nor Unattractive	Somewhat Unattractive	Very Unattractive	Extremely Unattractive
Verbal praise.	[	[	[	[	[	[	[
Extra, advanced instruction.	[	[	[	[	[	[	[
Receiving encouragement.	[	[	[	[	[	[	[
Being recommended as a future instructor. . .	[	[	[	[	[	[	[
Being treated as an individual.	[	[	[	[	[	[	[
Sending letter of merit to parents or loved ones.	[	[	[	[	[	[	[
Being taken to some social event during duty time.	[	[	[	[	[	[	[
Being chosen as a group spokesman.	[	[	[	[	[	[	[

PART VI

INSTRUCTOR BEHAVIOR DESCRIPTION

On this page is a list of items that may be used to describe the behavior of your training instructor. You are not asked to evaluate whether the behavior is desirable, but to indicate the extent to which your instructor actually engages in the behavior. Read each item. Decide whether your instructor (A) Always, (B) Often, (C) Occasionally, (D) Seldom, or (E) Never acts as described by the item. Circle one of the five letters following the item to show the answer you have selected.

A=Always B=Often C=Occasionally D=Seldom E=Never

1. He puts suggestions that are made by students into operation. . A B C D E
2. He sees to it that students are working up to their limits. . . A B C D E
3. He makes students feel at ease when talking with him. . . . . A B C D E
4. He insists that students follow standard ways of doing things in every detail. . . . . A B C D E
5. He is friendly and can be easily approached. . . . . A B C D E
6. He emphasizes meeting of deadlines. . . . . A B C D E
7. He is willing to make changes. . . . . A B C D E
8. He talks about how much should be done. . . . . A B C D E
9. He stresses the importance of high morale among students. . . . A B C D E
10. He criticizes poor classwork. . . . . A B C D E
11. He refuses to explain his actions. . . . . A B C D E
12. He rules with an iron hand. . . . . A B C D E
13. He sees that a student is rewarded for effective performance. . A B C D E
14. He insists that he be informed on decisions made by students. . A B C D E
15. He is easy to understand. . . . . A B C D E
16. He emphasizes the quantity of student accomplishments. . . . . A B C D E
17. He expresses appreciation when one of us performs well. . . . . A B C D E
18. He "needles" students for greater effort . . . . . A B C D E
19. He changes students tasks without talking it over with them. . . A B C D E
20. He asks for sacrifices from students for good of entire class. . A B C D E
21. He refuses to give in when students disagree with him. . . . . A B C D E
22. He tries out his new ideas. . . . . A B C D E
23. He tries to keep students in good standing with those in higher authority. . . . . A B C D E
24. He encourages overtime study. . . . . A B C D E

PART VII

PERSONAL VALUES QUESTIONNAIRE

This questionnaire involves statements which express what may be considered as valued, or attractive, outcomes in life, which individuals are motivated to attain. These statements are arranged in groups of 4. You are to decide for each group, the order of the statements as to their relative attractiveness for you. That is, you are to indicate the extent to which you feel motivated to obtain the state described by each statement. Within each group of 4, write a "1" in the space in front of the most attractive statement to you, a "2" in the space for the second most attractive, a "3" for the third most attractive statement, and a "4" for the statement in the group of the least attractiveness to you. Interpret the meaning of each statement for yourself; do not worry over the fact that other people may give it different meanings. Indicate a complete rank order for the statements in each group. If you have trouble deciding the order of two statements, make the best guess you can. Consider each group of statements separately from every other group.

1. ____Being active in helping other people
____Having a say in how things are done
____Getting along well with other people
____Being recognized for my achievements

2. ____Getting along well with other people
____Being looked up to and respected by others
____Promoting the well-being of other people
____Exercising control over people, events and situations

3. ____Exercising control over people, events and situations
____Having many personal friends
____Being active in helping other people
____Gaining acknowledgment for my successes in life

4. ____Promoting the well-being of other people
____Gaining acknowledgment for my successes in life
____Being liked and accepted by other people
____Having a say in how things are done

5. ____Having many personal friends
____Making sacrifices for the good of others
____Having a say in how things are done
____Being looked up to and respected by others

6. ____Promoting the well-being of other people
____Being recognized for my achievements
____Having influence over decisions and events that concern me
____Having many personal friends

7. ____Gaining acknowledgment for my successes in life
____Getting along well with other people
____Making sacrifices for the good of others
____Having influence over decisions and events that concern me

8. ____Being recognized for my achievements
____Making sacrifices for the good of others
____Being liked and accepted by other people
____Exercising control over people, events and situations

9. ____Having influence over decisions and events that concern me
____Being liked and accepted by other people
____Being looked up to and respected by others
____Being active in helping other people

PART VIII

Finally, we would like some personal background information about you. Please answer each of the following questions. All information you have provided will be held in strict confidence. Only the Ohio State researchers will analyze the responses and no individual can be identified in statistical summaries presented in the research reports. Thank you for your cooperation in completing these questionnaires.

1. Your name_____

2. Your sex (circle one) : Male Female

3. Your age_____

4. Your race (circle one) : Black White Other (please specify)_____

5. Your military rank_____

6. How many years have you been in the Air Force?_____

7. Are you in the regular U.S. Air Force? Yes____ No____
   If "no", with what service branch are you affiliated?_____

8. What is your current specialty area in technical training?_____
   a. What course are yo presently taking?_____
   b. In which block of the course are you now?_____

9. Did you volunteer for this tra specialty? Yes____ No____

10. What training specialty would you ideally like to be in?_____

11. Do you have any additional specialties from previous training?
    Yes (Specify)_____ No_____

12. What is your marital status? Single____ Married____ Divorced____ Widowed____

13. How many dependents (including wife and children) do you have?_____

14. What is your previous education (check the highest level attained) ?
    High School____
    Some college____
    College Degree____ (In what field?_____)
    Graduate Degree____ (In what field?_____)

15. Are you a rope or a class assistant?_____

16. What other military honors or distinctions do you have?_____

_____

Any Comments on These Questionnaires (Write Below - Optional)

APPENDIX B

SURVEY OF ATTITUDES AND OPINIONS OF
AIR FORCE TECHNICAL TRAINEES--FORM B

For the next period you will be asked to complete eight (8) questionnaires contained in this booklet. The general purpose of this task is to gather information about the opinions of people in Air Force training programs concerning several aspects of the training environment and themselves. This is part of a research project being conducted by The Ohio State University and sponsored by the Air Force Human Resources Laboratory. The project will examine the motivation of personnel and characteristics of the training setting with the goal of establishing high performance in, and attitudes toward technical training.

Specific instructions are provided for each of the eight (8) parts of this booklet. Please read them carefully before completing the questions in each part. If you have questions, feel free to ask the person administering the booklet to you. This is a survey of opinions, not a "test" of any sort with right and wrong answers. We are interested only in your complete and honest opinions and judgments.

Thank you for your cooperation and assistance.

Michael T. Wood

Michael T. Wood and

Richard J. Klimoski

Richard J. Klimoski
Project Directors

B

PART I

This first section of the questionnaire asks for your opinions on the degree of attractiveness, to you, of several possible outcomes of performing well in training. Place an X in the column which best describes the attractiveness of each outcome to you. An X in the extreme left means: "This outcome is extremely attractive to me; I would expend my maximum effort to obtain this." A mark in the extreme right means: "This outcome is extremely unattractive to me; I would expend my maximum effort to avoid this." A mark in the middle means: "This outcome is neither attractive nor unattractive to me; being able to obtain or avoid this would not affect my effort at all." For each outcome listed below, mark any one of the seven spaces. Indicate your own judgment of the attractiveness of each of these outcomes. Do not skip any of the outcomes listed.

Outcome	Extremely Attractive	Very Attractive	Somewhat Attractive	Neither Attractive Nor Unattractive	Somewhat Unattractive	Very Unattractive	Extremely Unattractive
Promotion in rank. . . .	[	[	[	[	[	[	[
Certificates or diplomas.	[	[	[	[	[	[	[
Eliminating involuntary cross-training.	[	[	[	[	[	[	[
Being excused from classroom training based on exams.	[	[	[	[	[	[	[
Letter of commendation in permanent records. . .	[	[	[	[	[	[	[
Being in classroom with students of same rank.	[	[	[	[	[	[	[
Free telephone calls home	[	[	[	[	[	[	[
Additional information concerning military assignments.	[	[	[	[	[	[	[
Field trips to location of training specialty.	[	[	[	[	[	[	[
Identity of honor students passed on to next block instructor.	[	[	[	[	[	[	[
Early notification of permanent base assignments.	[	[	[	[	[	[	[
Party for top performers	[	[	[	[	[	[	[

PART I-D continued. . .

Outcome	Extremely Attractive	Very Attractive	Somewhat Attractive	Neither Attractive Nor Unattractive	Somewhat Unattractive	Very Unattractive	Extremely Unattractive
Influence over class routine.	[	[	[	[	[	[	[
Eliminating numerical or letter grades and having pass-fail. . . .	[	[	[	[	[	[	[
Having your suggestions implemented.	[	[	[	[	[	[	[
Receiving more difficult and challenging work. .	[	[	[	[	[	[	[
Press releases to base newspaper.	[	[	[	[	[	[	[
Pictures and names of most improved students posted.	[	[	[	[	[	[	[
Specific information about your strengths and weaknesses.	[	[	[	[	[	[	[
Receiving an explanation for orders.	[	[	[	[	[	[	[
Being recognized for achievements.	[	[	[	[	[	[	[
Being liked and accepted.	[	[	[	[	[	[	[
Choice of dormitory. . .	[	[	[	[	[	[	[
Being able to help the instructor.	[	[	[	[	[	[	[
Social interaction. . . .	[	[	[	[	[	[	[
Being concerned for. . .	[	[	[	[	[	[	[
Not failing.	[	[	[	[	[	[	[
Being recommended for a "rope".	[	[	[	[	[	[	[
Being allowed to take meals at NCO Club. . .	[	[	[	[	[	[	[
Being able to teach a class.	[	[	[	[	[	[	[

B

PART II

In this part you are to consider the worth, to you, of each of several possible outcomes of performing well in training. Imagine that you have just received $300, which is about a month's pay for an airman third-class. Now, you cannot keep this money, but must spend it on "buying" from the list of ourcomes below. Distribute the $300 among the outcomes to indicate how much you would spend for each, by placing an (exact) dollar amount on the line next to each outcome. You may assign anywhere from 0 to 300 dollars (including zero dollars) for any particular outcome. There are only two restrictions: (1) The total numbers of dollars you spend on all outcomes must equal $300, and (2) Do not use cents or fractions of a dollar. Check on your total when you finish. Feel free to make changes as you go, to make the total come out right.

_____Promotions
_____Certificates or diplomas
_____Eliminating involuntary cross-training
_____Being excused from classroom training based on exams
_____Letter of commendation in permanent records
_____Being in a classroom with students of the same rank
_____Free telephone calls home
_____Additional information concerning military assignments
_____Field trips to location of training specialty
_____Identity of honor students passed on to next block instructor
_____Early notification of permanent base assignments
_____Party for top performers
_____Influence over class routine
_____Eliminating numerical or letter grades and having pass-fail
_____Having your suggestions implemented
_____Receiving more difficult and challenging work
_____Press releases to base newspaper
_____Pictures and names of most improved students posted
_____Specific information about your strengths and weaknesses
_____Receiving an explanation for orders
_____Being recognized for achievements
_____Being liked and accepted
_____Choice of dormitory
_____Being able to help the instructor
_____Social interaction
_____Being concerned for
_____Not failing
_____Being recommended for a "rope"
_____Being allowed to take meals at NCO club
_____Being able to teach a class

_____TOTAL (Please check)

B

PART III

Now consider the following outcomes. Indicate the extent to which you believe that each outcome presently depends on your performing effectively in the classroom. Place an X in one of the five (5) columns which best describes the relationship between your effectiveness and obtaining the outcome; do this for all of the outcomes.

Outcome	Being effective makes it impossible to obtain this outcome	Being effective makes it difficult to obtain this outcome	Being effective has nothing to do with obtaining this outcome	Being effective makes it easy to obtain this outcome	Being effective makes the attainment of this outcome a sure thing
Promotions in rank. . .	[	[	[	[	[
Certificates or diplomas.	[	[	[	[	[
Eliminating involuntary cross-training.	[	[	[	[	[
Being excused from classroom training based on exams.	[	[	[	[	[
Letter of commendation in permanent records. . .	[	[	[	[	[
Being in a classroom with students of same rank.	[	[	[	[	[
Free telephone calls home	[	[	[	[	[
Additional information concerning military assignments.	[	[	[	[	[
Field trips to location of training specialty.	[	[	[	[	[
Identity of honor students passed on to next block instructor.	[	[	[	[	[
Early notification of permanent base assignments.	[	[	[	[	[
Party for top performers.	[	[	[	[	[
Influence over class routine.	[	[	[	[	[
Eliminating numerical or letter grades and having pass-fail.	[	[	[	[	[

PART III - B continued. . .

Outcome	Being effective makes it impossible to obtain this outcome	Being effective makes it difficult to obtain this outcome	Being effective has nothing to do with obtaining this outcome	Being effective makes it easy to obtain this outcome	Being effective makes the attainment of this outcome a sure thing
Having your suggestions implemented.	[	[	[	[	[
Receiving more difficult and challenging work. .	[	[	[	[	[
Press releases to base newspaper.	[	[	[	[	[
Pictures and names of most improved students posted.	[	[	[	[	[
Specific information about your strengths and weaknesses.	[	[	[	[	[
Receiving an explanation for orders.	[	[	[	[	[
Being recognized for achievements.	[	[	[	[	[
Being liked and accepted.	[	[	[	[	[
Choice of dormitory. . .	[	[	[	[	[
Being able to help the instructor.	[	[	[	[	[
Social interaction. . . .	[	[	[	[	[
Being concerned for. . .	[	[	[	[	[
Not failing.	[	[	[	[	[
Being recommended for a "rope".	[	[	[	[	[
Being allowed to take meals at NCO club. . .	[	[	[	[	[
Being able to teach a class.	[	[	[	[	[

B

PART IV

Your task here is similar to part III, except that you are to place an X in the column that best describes the degree to which each outcome could be made to depend on performing effectively. That is, you should consider the potential likelihood that the outcome could be made to occur after effective classroom performance.

Outcome	There is no chance that this outcome could be made dependent on effectiveness.	There is a small chance that this outcome could be made dependent on effectiveness.	The chances are 50 - 50 that this outcome could be made dependent on effectiveness.	There is a strong chance that this outcome could be made dependent on effectiveness.	It is certain that this outcome could be made dependent on effectiveness.
Being able to teach class	[	[	[	[	[
Promotion in rank. . .	[	[	[	[	[
Certificates or diplomas.	[	[	[	[	[
Eliminating involuntary cross-training.	[	[	[	[	[
Being excused from classroom training based on exams.	[	[	[	[	[
Letter of commendation in permanent records. . .	[	[	[	[	[
Being in classroom with students of same rank.	[	[	[	[	[
Free telephone calls home	[	[	[	[	[
Additional information concerning military assignments.	[	[	[	[	[
Field trips to location of training specialty.	[	[	[	[	[
Identity of honor students passed on to next block instructor. . . .	[	[	[	[	[
Early notification of permanent base assignments.	[	[	[	[	[

PART IV - B CONTINUED. . .

Outcome	There is no chance that this outcome could be made dependent on effectiveness	There is a small chance that this outcome could be made dependent on effectiveness	The chances are 50 - 50 that this outcome could be made dependent on effectiveness	There is a strong chance that this outcome could be made dependent on effectiveness	It is certain that this outcome could be made dependent on effectiveness
Party for top performers.	[	[	[	[	[
Influence over class routine.	[	[	[	[	[
Eliminating numerical or letter grades and having pass-fail.	[	[	[	[	[
Having your suggestions implemented.	[	[	[	[	[
Receiving more difficult and challenging work.	[	[	[	[	[
Press releases to base newspaper.	[	[	[	[	[
Pictures and names of most improved students posted		[	[	[	[
Specific information about your strengths and weaknesses.	[	[	[	[	[
Receiving an explanation for orders.	[	[	[	[	[
Being liked and accepted.	[	[	[	[	[
Being recognized for achievements.	[	[	[	[	[
Choice of dormitory. . .	[	[	[	[	[
Being able to help the instructor.	[	[	[	[	[
Social interaction. . . .	[	[	[	[	[
Being concerned for. . .	[	[	[	[	[
Not failing.	[	[	[	[	[
Being recommended for a "name".	[	[	[	[	[
Being allowed to take meals at NCO club.	[	[	[	[	[

B

PART V

Consider a subset of the outcomes one final time and judge their attractiveness a little differently. First, indicate the attractiveness of each item as potentially administered (or given) to you by your instructor and place an I (for instructor) in a space on the line that best represents your feelings. Then, for the same item place a C (for class) on the scale at the point which reflects how attractive the outcome would be if administered (or given) to you by your classmates as a group. Note: It is possible for an outcome to be equally attractive coming from an instructor or a class, in which case both the C and the I would be placed in the same space. Now, please judge all the outcomes listed below. Do not skip any outcome.

Outcome	Extremely Attractive	Very Attractive	Somewhat Attractive	Neither Attractive Nor Un-attractive	Somewhat Un-attractive	Very Un-attractive	Extremely Un-attractive
Party for top performers.	[	[	[	[	[	[	[
Influence over class routine.	[	[	[	[	[	[	[
Having your suggestions implemented.	[	[	[	[	[	[	[
Specific information about your strengths and weaknesses.	[	[	[	[	[	[	[
Receiving an explanation for orders.	[	[	[	[	[	[	[
Being recognized for achievements.	[	[	[	[	[	[	[
Being liked and accepted.	[	[	[	[	[	[	[
Social interaction.	[	[	[	[	[	[	[
Being concerned for.	[	[	[	[	[	[	[
Being recommended for a "rope".	[	[	[	[	[	[	[
Being allowed to take meals at NCO club.	[	[	[	[	[	[	[
Being able to teach a class.	[	[	[	[	[	[	[

PART VI
INSTRUCTOR BEHAVIOR DESCRIPTION

On this page is a list of items that may be used to describe the behavior of your training instructor. You are not asked to evaluate whether the behavior is desirable, but to indicate the extent to which your instructor actually engages in the behavior. Read each item. Decide whether your instructor (A) Always, (B) Often, (C) Occasionally, (D) Seldom, or (E) Never acts as described by the item. Circle one of the five letters following the item to show the answer you have selected.

A=Always B=Often C=Occasionally D=Seldom E=Never

1. He puts suggestions that are made by students into operation. . A B C D E
2. He sees to it that students are working up to their limits. . . A B C D E
3. He makes students feel at ease when talking with him. . . . . A B C D E
4. He insists that students follow standard ways of doing things in every detail. . . . . A B C D E
5. He is friendly and can be easily approached. . . . . A B C D E
6. He emphasizes meeting of deadlines. . . . . A B C D E
7. He is willing to make changes. . . . . A B C D E
8. He talks about how much should be done. . . . . A B C D E
9. He stresses the importance of high morale among students. . . . A B C D E
10. He criticizes poor classwork. . . . . A B C D E
11. He refuses to explain his actions. . . . . A B C D E
12. He rules with an iron hand. . . . . A B C D E
13. He sees that a student is rewarded for effective performance. . A B C D E
14. He insists that he be informed on decisions made by students. . A B C D E
15. He is easy to understand. . . . . A B C D E
16. He emphasizes the quantity of student accomplishments. . . . . A B C D E
17. He expresses appreciation when one of us performs well. . . . . A B C D E
18. He "needles" students for greater effort . . . . . A B C D E
19. He changes students tasks without talking it over with them. . . A B C D E
20. He asks for sacrifices from students for good of entire class. . A B C D E
21. He refuses to give in when students disagree with him. . . . . A B C D E
22. He tries out his new ideas. . . . . A B C D E
23. He tries to keep students in good standing with those in higher authority. . . . . A B C D E
24. He encourages overtime study. . . . . A B C D E

PART VII
PERSONAL VALUES QUESTIONNAIRE

This questionnaire involves statements which express what may be considered as valued, or attractive, outcomes in life, which individuals are motivated to attain. These statements are arranged in groups of 4. You are to decide for each group, the order of the statements as to their relative attractiveness for you. That is, you are to indicate the extent to which you feel motivated to obtain the state described by each statement. Within each group of 4, write a "1" in the space in front of the most attractive statement to you, a "2" in the space for the second most attractive, a "3" for the third most attractive statement, and a "4" for the statement in the group of the least attractiveness to you. Interpret the meaning of each statement for yourself; do not worry over the fact that other people may give it different meanings. Indicate a complete rank order for the statements in each group. If you have trouble deciding the order of two statements, make the best guess you can. Consider each group of statements separately from every other group.

1. _____Being active in helping other people
_____Having a say in how things are done
_____Getting along well with other people
_____Being recognized for my achievements

2. _____Getting along well with other people
_____Being looked up to and respected by others
_____Promoting the well-being of other people
_____Exercising control over people, events and situations

3. _____Exercising control over people, events and situations
_____Having many personal friends
_____Being active in helping other people
_____Gaining acknowledgment for my successes in life

4. _____Promoting the well-being of other people
_____Gaining acknowledgment for my successes in life
_____Being liked and accepted by other people
_____Having a say in how things are done

5. _____Having many personal friends
_____Making sacrifices for the good of others
_____Having a say in how things are done
_____Being looked up to and respected by others

6. _____Promoting the well-being of other people
_____Being recognized for my achievements
_____Having influence over decisions and events that concern me
_____Having many personal friends

7. _____Gaining acknowledgment for my successes in life
_____Getting along well with other people
_____Making sacrifices for the good of others
_____Having influence over decisions and events that concern me

8. _____Being recognized for my achievements
_____Making sacrifices for the good of others
_____Being liked and accepted by other people
_____Exercising control over people, events and situations

9. _____Having influence over decisions and events that concern me
_____Being liked and accepted by other people
_____Being looked up to and respected by others
_____Being active in helping other people

PART VIII

Finally, we would like some personal background information about you. Please answer each of the following questions. All information you have provided will be held in strict confidence. Only the Ohio State researchers will analyze the responses and no individual can be identified in statistical summaries presented in the research reports. Thank you for your cooperation in completing these questionnaires.

1. Your name_____

2. Your sex (circle one) : Male Female

3. Your age_____

4. Your race (circle one) : Black White Other (please specify)_____

5. Your military rank_____

6. How many years have you been in the Air Force?_____

7. Are you in the regular U.S. Air Force? Yes____No____
   If "no", with what service branch are you affiliated?_____

8. What is your current specialty area in technical training?_____
   a. What course are yo presently taking?_____
   b. In which block of the course are you now?_____

9. Did you volunteer for this training specialty? Yes____No____

10. What training specialty would you ideally like to be in?_____

11. Do you have any additional specialties from previous training?
    Yes (Specify)_____No_____

12. What is your marital status? Single____Married____Divorced____Widowed____

13. How many dependents (including wife and children) do you have?_____

14. What is your previous education (check the highest level attained) ?
    High School____
    Some college____
    College Degree____ (In what field?_____)
    Graduate Degree____ (In what field?_____)

15. Are you a rope or a class assistant?_____

16. What other military honors or distinctions do you have?_____

_____

Any Comments on These Questionnaires (Write Below - Optional)

APPENDIX C

SURVEY OF ATTITUDES AND OPINIONS OF
AIR FORCE TECHNICAL INSTRUCTORS--FORM A

Researchers from The Ohio State University in conjunction with the Air Force Human Resources Laboratory are conducting a project which will examine the motivation of personnel and the characteristics of the Air Force Training setting with the goal of establishing high performance in and attitudes toward technical training. The major effort of the project will involve gathering information and opinions from trainees in various technical programs. However, because you, the instructor, are a key person in the training environment, we would like your judgments and opinions of the training situation.

We would like you to complete the questionnaires contained in this booklet. Specific instructions are provided for each part. If you have any questions feel free to ask the person administering the booklet to you. This is a survey of opinions, not a test of any sort where there are right or wrong answers. We are interested only in your complete and honest opinions and judgments.

Thank you for your cooperation and assistance.

Michael T. Wood and

Richard J. Klimoski
Project Directors

PART I

A

This first section of the booklet presents a list of several possible outcomes of performing well in a training situation. We would like your judgment of the degree to which each outcome could be made to depend on performing effectively in training. That is, you should consider the potential likelihood that the outcome could be made to occur after effective classroom performance. Please do this by marking your judgment on the special scale next to each outcome. Place an X in the space that best reflects your opinion.

Outcome	There is no chance that this outcome could be made dependent on effectiveness	There is a small chance that this outcome could be made dependent on effectiveness	The chances are 50 - 50 that this outcome could be made dependent on effectiveness	There is a strong chance that this outcome could be made dependent on effectiveness	It is certain that this outcome could be made dependent on effectiveness
Verbal praise.	[	[	[	[	[
Choice of permanent base assignment.	[	[	[	[	[
Opportunity to cross-train.	[	[	[	[	[
College credit for technical training.	[	[	[	[	[
Co-ed classes.	[	[	[	[	[
Time-off (additional leave time).	[	[	[	[	[
Progressing through course at own pace.	[	[	[	[	[
Interaction with instructor during class. . . .	[	[	[	[	[
Reduced squadron detail.	[	[	[	[	[
Freedom from instructors supervision.	[	[	[	[	[
Being in honor dormitory	[	[	[	[	[
Being able to help classmates learn material. .	[	[	[	[	[
Smoking and drinking coffee in class when possible.	[	[	[	[	[
Ribbon for outstanding performance.	[	[	[	[	[
Wearing civilian clothes to class.	[	[	[	[	[

PART I - A continued. . .

Outcome	There is no chance that this outcome could be made dependent on effectiveness	There is a small chance that this outcome could be made dependent on effectiveness	The chances are 50 - 50 that this outcome could be made dependent on effectiveness	There is a strong chance that this outcome could be made dependent on effectiveness	It is certain that this outcome could be made dependent on effectiveness
Press release to hometown newspaper.	[	[	[	[	[
Relaxation of curfew restrictions.	[	[	[	[	[
Extra, advanced instruction.	[	[	[	[	[
Pictures and names of honor students posted. . . .	[	[	[	[	[
Additional information concerning related civilian occupations. .	[	[	[	[	[
Display of completed work	[	[	[	[	[
Special seating in classroom.	[	[	[	[	[
Freedom from classroom exercises.	[	[	[	[	[
Being able to evaluate your own performance. .	[	[	[	[	[
Receiving encouragement.	[	[	[	[	[
Being recommended as a future instructor. . .	[	[	[	[	[
Being able to set learning goals.	[	[	[	[	[
Being treated as an individual.	[	[	[	[	[
Choice of roomates. . . .	[	[	[	[	[
Sending letter of merit to parents or loved ones	[	[	[	[	[
Being taken to some social event during duty time.	[	[	[	[	[
Being chosen as group spokesman.	[	[	[	[	[

PART II
INSTRUCTOR OPINION QUESTIONNAIRE

On the following page is a list of items that may be used to describe your attitudes and opinions of specific behavior that you, an instructor, may exhibit in the training situation. You are to indicate how often you think you should engage in each of the behaviors listed. Read each item and circle the letter that best reflects your opinion. Decide whether you think you should (A) Always, (B) Often, (C) Occasionally, (D) Seldom, or (E) Never act as described by the item.

A=Always B=Often C=Occasionally D=Seldom E=Never.

1. Put suggestions that are made by students into operation. . . . . A B C D E
2. See to it that students are working up to their limits. . . . . A B C D E
3. Make students feel at ease when talking with you. . . . . A B C D E
4. Insist that students follow standard ways of doing things in every detail. . . . . A B C D E
5. Be friendly and can be easily approached. . . . . A B C D E
6. Emphasize meeting of deadlines. . . . . A B C D E
7. Be willing to make changes. . . . . A B C D E
8. Talk about how much should be done. . . . . A B C D E
9. Stress the importance of high morale among students. . . . . A B C D E
10. Criticize poor classwork. . . . . A B C D E
11. Refuse to explain your actions. . . . . A B C D E
12. Rule with an iron hand. . . . . A B C D E
13. See that a student is rewarded for effective performance. . . . . A B C D E
14. Insist that you be informed on decisions made by students. . . . A B C D E
15. Be easy to understand. . . . . A B C D E
16. Emphasize the quantity of student accomplishments. . . . . A B C D E
17. Express appreciation when a student performs well. . . . . A B C D E
18. "Needle" students for greater effort. . . . . A B C D E
19. Change students tasks without first talking it over with them. . . A B C D E
20. Ask for sacrifices from students for good of entire class. . . . A B C D E
21. Refuse to give in when students disagree with you. . . . . A B C D E
22. Try out your new ideas. . . . . A B C D E
23. Try to keep students in good standing with those in higher authority. . . . . A B C D E
24. Encourage overtime study. . . . . A B C D E

PART III

Finally, we would like some personal background information about you. Please answer each of the following questions. All information you have provided will be held in strict confidence. Only the Ohio State researchers will analyze the responses and no individual can be identified in statistical summaries presented in the research reports. Thank you for your cooperation in completing these questionnaires.

1. ~~Your name~~ X X X X

2. Your sex (Circle one) Male Female

3. Your age_____

4. Your race (Circle one) Black White Other (Please specify)_____

5. Status: Civilian_____ If civilian, were you ever in the military_____. If yes, were you a technical instructor_____
   If yes, what was your highest rank_____
   Military_____ If military, what is your rank_____

6. How many years have you been in the Air Force?_____
   How many years have you been teaching_____

7. What is your current specialty area in technical training?_____
   a. What is the course you are presently teaching_____
   b. Block(s) presently teaching_____

8. What teaching specialty would you ideally like to be in?_____

9. What are other specialties you have taught?_____

10. What is your marital status? Single___Married___Divorced___Widowed___

11. How many dependents (including wife and children) do you have?_____

12. What is your previous education (check the highest level attained)
    High School_____
    Some college_____
    College Degree_____ In what field_____
    Graduate Degree____ In what field_____

13. Have you ever been given an award or specifically commended for your teaching?_____

Any Comments on These Questionnaires (Write Below - Optional)

APPENDIX D

SURVEY OF ATTITUDES AND OPINIONS OF
AIR FORCE TECHNICAL INSTRUCTORS--FORM B

Researchers from The Ohio State University in conjunction with the Air Force Human Resources Laboratory are conducting a project which will examine the motivation of personnel and the characteristics of the Air Force Training setting with the goal of establishing high performance in and attitudes toward technical training. The major effort of the project will involve gathering information and opinions from trainees in various technical programs. However, because you, the instructor, are a key person in the training environment, we would like your judgments and opinions of the training situation.

We would like you to complete the questionnaires contained in this booklet. Specific instructions are provided for each part. If you have any questions feel free to ask the person administering the booklet to you. This is a survey of opinions, not a test of any sort where there are right or wrong answers. We are interested only in your complete and honest opinions and judgments.

Thank you for your cooperation and assistance.

Michael T. Wood

Michael T. Wood and

Richard J. Klimoski

Richard J. Klimoski
Project Directors

PART I

This first section of the booklet presents a list of several possible outcomes of performing well in a training situation. We would like your judgment of the degree to which each outcome could be made to depend on performing effectively in training. That is, you should consider the potential likelihood that the outcome could be made to occur after effective classroom performance. Please do this by marking your judgment on the special scale next to each outcome. Place an X in the space that best reflects your opinion.

Outcome	There is no chance that this outcome could be made dependent on effectiveness	There is a small chance that this outcome could be made dependent on effectiveness	The chances are 50 - 50 that this outcome could be made dependent on effectiveness	There is a strong chance that this outcome could be made dependent on effectiveness	It is certain that this outcome could be made dependent on effectiveness
Promotion in rank. . .	[	[	[	[	
Certificate or diploma. .	[	[	[	[	[
Eliminating involuntary cross-training.	[	[	[	[	[
Being excused from classroom training based on exams.	[	[	[	[	[
Letter of commendation in permanent records. . .	[	[	[	[	[
Being in a classroom with students of same rank.	[	[	[	[	[
Free telephone calls home	[	[	[	[	[
Additional information concerning military assignments.	[	[	[	[	[
Field trips to location of training specialty. . .	[	[	[	[	[
Identity of honor students passed on to next block instructor.	[	[	[	[	[
Early notification of permanent base assignment.	[	[	[	[	[
Party for top performers.	[	[	[	[	[
Influence over class routing.	[	[	[	[	[

PART I - B continued. . .

Outcome	There is no chance that this outcome could be made dependent on effectiveness	There is a small chance that this outcome could be made dependent on effectiveness	The chances are 50 - 50 that this outcome could be made dependent on effectiveness	There is a strong chance that this outcome could be made dependent on effectiveness	It is certain that this outcome could be made dependent on effectiveness
Eliminating numerical or letter grades and having pass-fail. . . .	[	[	[	[	[
Having your suggestions implemented.	[	[	[	[	[
Receiving more difficult and challenging work. .	[	[	[	[	[
Press releases to base newspaper.	[	[	[	[	[
Pictures and names of most improved student posted	[	[	[	[	[
Specific information about your strengths and weaknesses.	[	[	[	[	[
Receiving an explanation for orders.	[	[	[	[	[
Being recognized for achievements.	[	[	[	[	[
Being liked and accepted.	[	[	[	[	[
Choice of dormitory. . .	[	[	[	[	[
Being able to help the instructor.	[	[	[	[	[
Social interaction. . . .	[	[	[	[	[
Being concerned for. . .	[	[	[	[	[
Not failing.	[	[	[	[	[
Being recommended for a "rope".	[	[	[	[	[
Being allowed to take meals at NCO club.	[	[	[	[	[
Being able to teach class.	[	[	[	[	[

PART II

INSTRUCTOR OPINION QUESTIONNAIRE

On the following page is a list of items that may be used to describe your attitudes and opinions of specific behavior that you, an instructor, may exhibit in the training situation. You are to indicate how often you think you should engage in each of the behaviors listed. Read each item and circle the letter that best reflects your opinion. Decide whether you think you should (A) Always, (B) Often, (C) Occasionally, (D) Seldom, or (E) Never act as described by the item.

A=Always B=Often C=Occasionally D=Seldom E=Never

1. Put suggestions that are made by students into operation. . . . . A B C D E
2. See to it that students are working up to their limits. . . . . A B C D E
3. Make students feel at ease when talking with you. . . . . A B C D E
4. Insist that students follow standard ways of doing things in every detail. . . . . A B C D E
5. Be friendly and can be easily approached. . . . . A B C D E
6. Emphasize meeting of deadlines. . . . . A B C D E
7. Be willing to make changes. . . . . A B C D E
8. Talk about how much should be done. . . . . A B C D E
9. Stress the importance of high morale among students. . . . . A B C D E
10. Criticize poor classwork. . . . . A B C D E
11. Refuse to explain your actions. . . . . A B C D E
12. Rule with an iron hand. . . . . A B C D E
13. See that a student is rewarded for effective performance. . . . . A B C D E
14. Insist that you be informed on decisions made by students. . . . A B C D E
15. Be easy to understand. . . . . A B C D E
16. Emphasize the quantity of student accomplishments. . . . . A B C D E
17. Express appreciation when a student performs well. . . . . A B C D E
18. "Needle" students for greater effort. . . . . A B C D E
19. Change students tasks without first talking it over with them. . . A B C D E
20. Ask for sacrifices from students for good of entire class. . . . A B C D E
21. Refuse to give in when students disagree with you. . . . . A B C D E
22. Try out your new ideas. . . . . A B C D E
23. Try to keep students in good standing with those in higher authority. . . . . A B C D E
24. Encourage overtime study. . . . . A B C D E

PART III

Finally, we would like some personal background information about you. Please answer each of the following questions. All information you have provided will be held in strict confidence. Only the Ohio State researchers will analyze the responses and no individual can be identified in statistical summaries presented in the research reports. Thank you for your cooperation in completing these questionnaires.

1. ~~Your name~~ X X X X

2. Your sex (Circle one) Male Female

3. Your age_____

4. Your race (Circle one) Black White Other (Please specify)_____

5. Status: Civilian_____ If civilian, were you ever in the military_____. If yes, were you a technical instructor_____
   If yes, what was your highest rank_____
   Military_____ If military, what is your rank_____

6. How many years have you been in the Air Force?_____
   How many years have you been teaching_____

7. What is your current specialty area in technical training?_____
   a. What is the course you are presently teaching_____
   b. Block(s) presently teaching_____

8. What teaching specialty would you ideally like to be in?_____

9. What are other specialties you have taught?_____

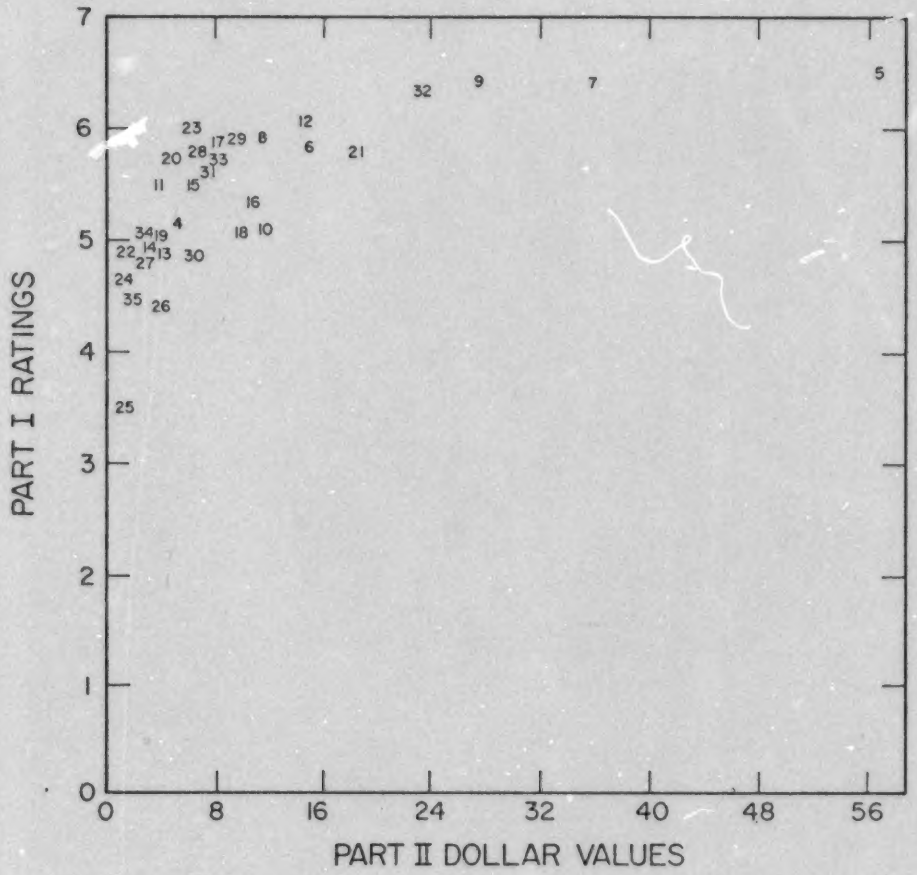
10. What is your marital status? Single___Married___Divorced___Widowed___

11. How many dependents (including wife and children) do you have?_____

12. What is your previous education (check the highest level attained)
    High School_____
    Some college_____
    College Degree_____ In what field_____
    Graduate Degree____ In what field_____

13. Have you ever been given an award or specifically commended for your teaching?_____

Any Comments on These Questionnaires (Write Below - Optional)



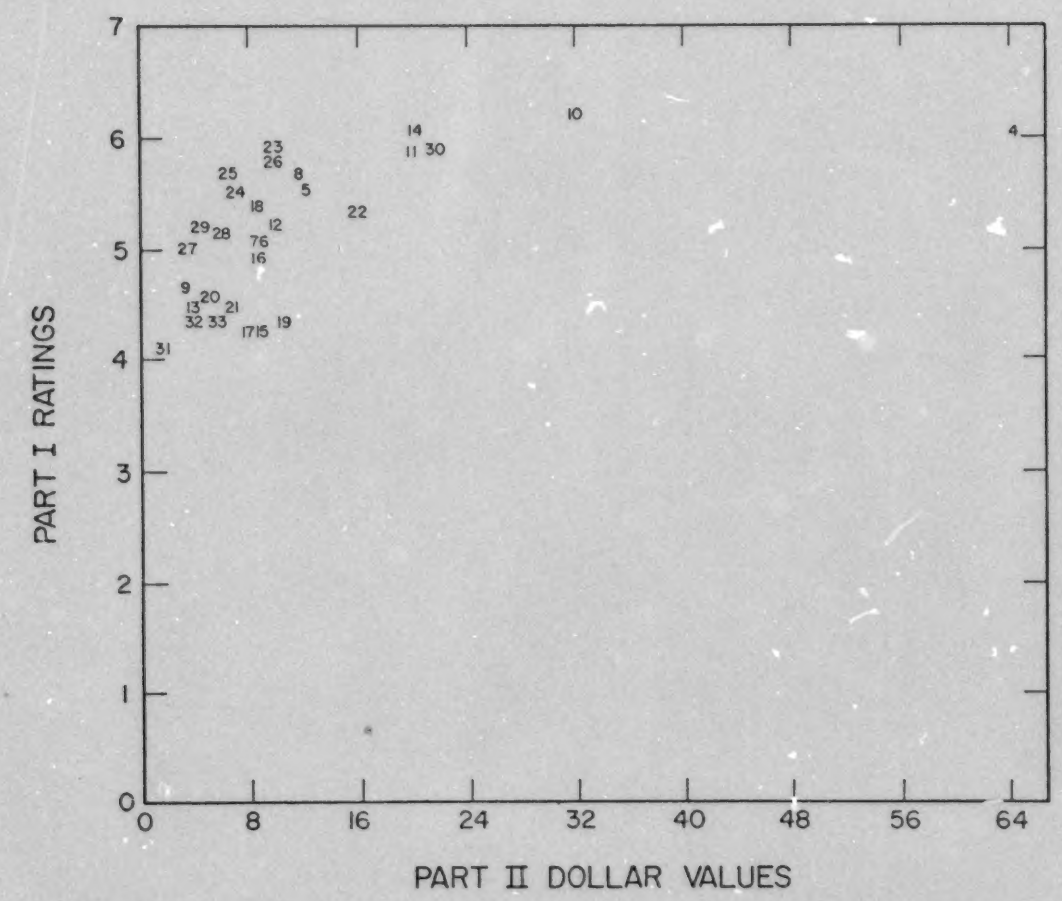
APPENDIX E

SCATTERPLOTS OF RELATIONSHIPS BETWEEN MEASURES OF INCENTIVE ATTRACTIVENESS

Form A

4. Verbal praise
5. Choice of permanent base assignment
6. Opportunity to cross-train
7. College credit for technical training
8. Coed classes
9. Time off
10. Progessing at own pace in course
11. Interaction with instructor during class
12. Reduced squadron detail
13. Freedom from supervision
14. Being in honor dorms
15. Help classmates learn material
16. Smoking and drinking coffee in class
17. Ribbons for outstanding performance
18. Civilian clothes to class
19. Press release to hometown paper
20. Relaxation of curfew
21. Advanced instruction
22. Pictures and names of honor students posted
23. Information, civilian occupations
24. Display of completed work
25. Special classroom seating
26. Freedom from classroom exercises
27. Evaluate own performance
28. Receiving encouragement
29. Choice of roommates
30. Recommended as future instructor
31. Set learning goals
32. Treated as an individual
33. Letter of merit to loved ones
34. Social event during duty time
35. Group spokesman

Note: Means from which these scatterplots were drawn are shown in the text in Table 3.



Form B

4. Promotion
5. Certificates or diplomas
6. Eliminating involuntary cross-training
7. Excused from class by exams
8. Letter of commendation
9. Classroom of same rank students
10. Free phone calls home
11. Information, military assignments
12. Field trips
13. Identity of honor students passed on
14. Early notification of permanent base assignment
15. Party for top performers
16. Influence over class routine
17. Pass-fail grading system
18. Having suggestions implemented
19. Difficult, challenging work
20. Press release, base paper
21. Posting names and pictures of most improved students
22. Information, strengths/weaknesses
23. Explanation for orders
24. Recognized for achievements
25. Being liked and accepted
26. Choice of dormitory
27. Help instructor
28. Social interaction
29. Being concerned for
30. Not failing
31. Recommended for a "rope"
32. Meals at NCO club
33. Teach a class

APPENDIX F

AGREEMENT CORRELATIONS BETWEEN RATING AND DOLLAR METHODS OF ASSESSING INCENTIVE ATTRACTIVENESS

Incentive	Correlation	Rating	Dollar
Verbal praise	.12	21	7
Choice of base	.10	19	16
Opportunity to cross-train	.23	1	15
College credit	.27	3	4
Coed classes	.25	3	14
Time off	.22	11	8
Self pacing	.23	5	18
Interaction with instructor	.03	31	31
Reduced squadron detail	.16	27	23
Freedom from supervision	.19	10	23
Honor dorm	.34	4	0
Help classmates	.27	10	1
Smoking and drinking in class	.27	0	19
Ribbon	.20	16	1
Civilian clothes	.35	0	4
Press release hometown paper	.24	12	1
Relax curfew	.13	27	24
Advanced instruction	.00	31	31
Pictures honor students	.30	7	0
Information, civilian jobs	.18	12	22
Display completed work	.03	31	31
Special seating in class	.20	4	4
Freedom from class exercises	.20	7	22
Evaluate own performance	.19	19	22
Receiving encouragement	.18	21	17
Choice of roommates	.19	17	20
Future instructor	.26	7	13
Set learning goals	.10	27	24
Treated as an individual	.19	18	15
Letter of merit to loved ones	.21	16	15
Social event	.14	20	19
Group spokesman	.23	10	18
Promotions	.27	2	0
Certificates	.31	6	0
Eliminate involuntary cross-train	.20	5	0
Excused from class based on exam	.32	0	0
Letter of commendation	.21	20	0
Same rank students	.08	25	4
Phone calls	.22	10	0
Information, military assignments	.17	24	3
Field trips	.32	2	0
Identity of honor students passed on	.24	13	1
Early assignment notification	.13	25	5
Party for top performers	.17	17	0
Influence over class	.22	6	2
Pass-fail grades	.22	0	0
Having suggestions implemented	.13	22	5
Challenging work	.37	0	0
Press release base paper	.23	18	1
Pictures improved students	.10	24	9

Incentive	Correlation	Rating	Dollar
Information, strengths/weaknesses	.18	9	3
Explanation for orders	.27	3	0
Recognition	.16	26	3
Being liked and accepted	.18	21	1
Dorm choice	.32	3	0
Help instructor	.26	12	1
Social interaction	.19	17	1
Being concerned for	.21	14	0
Not failing	.20	9	0
Recommended for rope	.35	0	0
MCO meals	.24	8	0
Teach a class	.28	5	0

Note: The rating and dollar columns refer to the number of within-method correlations that were higher than the between methods correlation for that incentive. Higher numbers indicate lower construct validity.

APPENDIX G

FACTOR ANALYSES OF INCENTIVE ATTRACTIVENESS RATINGS

Table G-1

Factor Matrix for Form A Incentives

Incentive	Factors I	II	III	IV	V	VI	VII	VIII	IX
4. Verbal Praise	43								
5. Choice base assmt				40					
6. Cross-train									
7. College credit				85					
8. Co-ed classes				34					
9. Time-off						40			
10. Progress own pace								74	
11. Interaction with instructor							67		
12. Reduced detail				34		47			
13. Freedom supervision									51
14. Honor dorms	42								58
15. Help classmates	36								
16. Smoking, coffee						39			
17. Ribbons	54								
18. Civilian clothes						54			
19. Press release home	63								
20. Curfew						48			
21. Advanced instruction			46						
22. Honor pictures	47	36							
23. Information, civil jobs			42						
24. Display work		44							
25. Seating		61							
26. Freedom exercises		64							
27. Evaluate own perf		41							
28. Receive encouragement	55						41		
29. Choice of roommates			41						
30. Future instructor	42								
31. Set learn[illegible] goals			64						
32. Treated [illegible]vidual			53						
33. Letter [illegible]rit	84								
34. Social [illegible]ent									
35. Group spokesman					84				

Note: Loadings less than .40 are omitted, as are decimal points. Means and standard deviations for the incentive attractiveness ratings are shown in Table 3 in the text.

Table G-2

Factor Matrix for Form B Incentives

Incentive	Factors I	II	III	IV	V	VI	VII	VIII	XI
4. Promotion									
5. Certificates	45								-35
6. Eliminate cross-training								54	
7. Excused from class					60				
8. Letter commendation	36								
9. Same rank class	40			37					
10. Free phone calls home									
11. Info, military jobs							71		
12. Field trips									
13. Honor identity	68								
14. Permanent base							49		
15. Party, top perf.	39								
16. Influence class						71			
17. Pass-fail grades									52
18. Suggestions		32			36				
19. Challenging work			52						
20. Press release, base	45	32							
21. Improved pictures	79								
22. Info. strengths							34		
23. Explanation for orders					55				
24. Recognition for achieve	58	35							
25. Liked and accepted	48	52							
26. Choice of dorm									
27. Help instructor		41							
28. Social interaction		73							
29. Being concerned for		68							
30. Not failing									
31. Recommended for "rope"				50					
32. Meals at NCO club				60					
33. Teach a class			69						

Note: Loadings less than .40 are omitted, as are decimal points. See Table 3 for means and standard deviations.

APPENDIX H

AIR FORCE TECHNICAL STUDENTS' ATTITUDES
AND OPINIONS: LOWRY SURVEY

This set of questionnaires asks for your opinions on several topics concerning your life in Air Force technical training. This information is being collected as part of a study which is examining various ways of improving the training situation in technical school. The study is being conducted by researchers at The Ohio State University and is sponsored by the Air Force Human Resources Laboratory. Please read the instructions carefully before doing each part. This information will be confidential and seen only by the Ohio State research staff. It is also anonymous, and individuals will not be identified in statistical summaries of the data. Thank you for your cooperation. Turn the page and begin. If you have questions about what is wanted, ask the person administering these forms.

Milton D. Hakel
Michael T. Wood
Richard J. Klimoski

Project Directors

Part I

This section asks for your opinions on the degree of attractiveness, to you, of several possible outcomes of performing well in training. Place an X in the column which best describes the attractiveness of each outcome to you. An X in the extreme left column means: "This outcome is extremely attractive to me; I would expend my maximum effort to obtain this." A mark in the extreme right column: "This outcome is extremely unattractive to me; I would expend my maximum effort to avoid this." A mark in the middle means: "This outcome is neither attractive nor unattractive to me; being able to obtain or avoid this would not affect my effort at all." For each outcome on this page and the next two pages mark any one of the seven spaces. Indicate your own judgments of attractiveness, and do not skip any outcomes.

Outcome	Extremely Attractive	Very Attractive	Somewhat Attractive	Neither Attractive nor Unattractive	Somewhat Unattractive	Very Unattractive	Extremely Unattractive
Promotion immediately after training							
A certificate for class achievement							
Getting information about civilian occupations related to your specialty							
Being able to choose the uniform you wear to class							
Being recommended as a future instructor							
72-hour pass							
Reduced squadron details							
Being selected as a "rope"							

Outcome	Extremely Attractive	Very Attractive	Somewhat Attractive	Neither Attractive nor Unattractive	Somewhat Unattractive	Very Unattractive	Extremely Unattractive
Getting extra advanced instruction in your specialty							
Free 5-minute phone call to any location							
Ribbon for outstanding training performance							
Having some choice in your permanent base assignment							
Being able to smoke in class							
Getting further information about your military assignment							
Having your accomplishment noted in the base newspaper							
Having a letter of merit sent to your family							
Being allowed to proceed at own pace (not in formation) to and from classes							

Outcome	Extremely Attractive	Very Attractive	Somewhat Attractive	Neither Attractive nor Unattractive	Somewhat Unattractive	Very Unattractive	Extremely Unattractive
Being able to drink soda (pop) or coffee in class							
Having a choice of where you will eat your meals							
Having your name and picture posted for your class achievement							
Talking over your strengths and weaknesses with your instructor							
Serving as a tutor in remedial instruction							
24-hour pass							
Taking a "field trip" to a place or other training course of interest to you							
Planning and attending a social event off base							
Having the identity of honor students passed to next duty instructor							
Having your accomplishment noted in your hometown newspaper							

Part IIa

In this part you are to consider the worth, to you, of several possible outcomes of performing well in training. Imagine that you have just received $100, which is about a third of a month's airman's pay. Now, you cannot keep this money, but must spend it on "buying" from the list of outcomes below. Distribute the $100 among the outcomes to indicate how much you would spend for each, by placing an (exact) dollar amount on the line next to each outcome. You may assign anywhere from 0 to 100 dollars for any particular outcome. There are only two restrictions: (1) the total number of dollars you spend on all outcomes must equal $100, and (2) do not use cents or fractions of a dollar. Check your total when you finish. Feel free to make changes as you go, to make the total come out right.

Dollars	Outcome
_____	Promotion immediately after training
_____	Having a choice of where you will eat your meals
_____	72-hour pass
_____	Having your accomplishment noted in the base newspaper
_____	Having the identity of honor students passed to next duty instructor
_____	Reduced squadron details
_____	Serving as a tutor in remedial instruction
_____	Being able to smoke in class
_____	Taking a "field trip" to a place or other training course of interest to you
100	Total dollars spent

Part IIb

Assume you have another $100. Please do the same thing you did on the last page, and distribute this $100 among the following outcomes.

Dollars	Outcome
_____	Having some choice in your permanent base assignment
_____	Being selected as a "rope"
_____	Talking over your strengths and weaknesses with your instructor
_____	Planning and attending a social event off base
_____	Having your accomplishment noted in your hometown newspaper
_____	Getting extra advanced instruction in your specialty
_____	Having your name and picture posted for your class achievement
_____	Being able to choose the uniform you wear to class
_____	Ribbon for outstanding training performance
100	Total dollars spent _____

Part IIc

Assume you have another $100. Please do the same thing you did on the last two pages, and distribute this $100 among the following outcomes.

Dollars	Outcomes
_____	Free 5-minute phone call to any location
_____	Being able to proceed at own pace (not in formation) to and from classes
_____	Getting further information about your military assignment
_____	Being able to drink soda (pop) or coffee in class
_____	24-hour pass
_____	A certificate for class achievement
_____	Being recommended as a future instructor
_____	Getting information about civilian occupations related to your specialty
_____	Having a letter of merit sent to your family
100	Total dollars spent

Part III

Listed below are some activities that might take place in a training classroom. For each activity, you are to indicate two things: (1) Place an X in one of the five spaces on the first line to indicate how frequently this activity presently occurs in your class. Check "Always," "Often," "Occasionally," "Seldom," or "Never." (2) Place an X in one of the five spaces on the second line for each activity to indicate how frequently you think this activity should occur. Check whether it should occur "Always," "Often," "Occasionally," "Seldom," or "Never."

1. Someone gives encouragement to you.

	Always	Often	Occasionally	Seldom	Never
Now:					
Should:					

2. You give encouragement to someone else.

	Always	Often	Occasionally	Seldom	Never
Now:					
Should:					

3. Someone treats you as an individual.

	Always	Often	Occasionally	Seldom	Never
Now:					
Should:					

4. You treat someone else as an individual.

	Always	Often	Occasionally	Seldom	Never
Now:					
Should:					

5. Someone praises your achievements.

	Always	Often	Occasionally	Seldom	Never
Now:					
Should:					

Part III continued

6. You praise someone else's achievements.

Now: Always | Often | Occasionally | Seldom | Never

Should: Always | Often | Occasionally | Seldom | Never

7. Someone demonstrates that he likes and accepts you.

Now: Always | Often | Occasionally | Seldom | Never

Should: Always | Often | Occasionally | Seldom | Never

8. You show someone else that you like and accept him (her).

Now: Always | Often | Occasionally | Seldom | Never

Should: Always | Often | Occasionally | Seldom | Never

9. You exercise some influence over what goes on in class.

Now: Always | Often | Occasionally | Seldom | Never

Should: Always | Often | Occasionally | Seldom | Never

10. Another class member exercises some influence over what goes on in class.

Now: Always | Often | Occasionally | Seldom | Never

Should: Always | Often | Occasionally | Seldom | Never

11. Someone shows concern for you.

Now: Always | Often | Occasionally | Seldom | Never

Should: Always | Often | Occasionally | Seldom | Never

12. You show concern for someone else.

Now: Always | Often | Occasionally | Seldom | Never

Should: Always | Often | Occasionally | Seldom | Never

Finally, we would like some personal background information about you. Please answer each of the following questions. All information will be held in confidence. No individual can be identified in statistical summaries presented in the research reports. Thank you for your cooperation in completing these questionnaires.

Sex (circle one): Male Female

Race (circle one): Black White Mexican-American Other (specify)_____

Age _____

Military rank _____

Years in the Air Force (if less than 1 year, give months) _____ Yr. _____ Mo.

Your current training course (name):_____

Number of weeks you have been in this course: _____

What is your training specialty? That is, what courses will you take after this one or have you taken? _____

Did you volunteer for this specialty? Yes _____ No _____

Marital status: Single ___ Married ___ Widowed ___ Divorced ___

Number of dependents (self, wife, children): _____

Home town and state: _____; Population: _____

Education (check highest level attained so far):

Junior high school (grade 8) _____

High school _____

Some college _____

College degree _____ (in what field? _____)

Graduate degree _____ (in what field? _____)

APPENDIX I

AIR FORCE TECHNICAL INSTRUCTORS ATTITUDES
AND OPINIONS: LOWRY SURVEY

Researchers from The Ohio State University in conjunction with the Air Force Human Resources Laboratory are conducting a project which will examine the motivation of personnel and the characteristics of the Air Force Training setting with the goal of establishing high performance in and attitudes toward technical training. The major effort of the project will involve gathering information and opinions from trainees in various technical programs. However, because you, the instructor, are a key person in the training environment, we would like your judgments and opinions of the training situation.

We would like you to complete the questionnaires contained in this booklet. Specific instructions are provided for each part. If you have any questions feel free to ask the person administering the booklet to you. This is a survey of opinions, not a test of any sort where there are right or wrong answers. We are interested only in your complete and honest opinions and judgments.

Milton D. Hakel
Michael T. Wood
Richard J. Klimoski

Project Directors

We would like you to consider the list of outcomes on the next three pages. These outcomes might be considered as potential incentives for trainees to perform well in their technical training program. Your task is to tell us how realistic these possibilities are. Indicate the extent to which you believe that each outcome could be made to depend on performing effectively. To do this check one of the five spaces on the line next to each outcome. The meaning of checking each space is given in the descriptions at the top of each column.

Outcome	There is no chance that this outcome could be made dependent on effectiveness	There is a small chance that this outcome could be made dependent on effectiveness	Chances are 50-50 that this outcome could be made dependent on effectiveness	There is a strong chance that this outcome could be made dependent on effectiveness	It is certain that this outcome could be made dependent on effectiveness
Promotion immediately after training					
A certificate for class achievement					
Getting information about civilian occupations related to your specialty					
Being able to choose the uniform you wear to class					
Being recommended as a future instructor					
72-hour pass					
Reduced squadron details					
Being selected as a "rope"					
Getting extra advanced instruction in your specialty					

Outcome	There is no chance that this outcome could be made dependent on effectiveness	There is a small chance that this outcome could be made dependent on effectiveness	Chances are 50-50 that this outcome could be made dependent on effectiveness	There is a strong chance that this outcome could be made dependent on effectiveness	It is certain that this outcome could be made dependent on effectiveness
Free 5-minute phone call to any location					
Ribbon for outstanding training performance					
Having some choice in your permanent base assignment					
Being able to smoke in class					
Getting further information about your military assignment					
Having your accomplishment noted in the base newspaper					
Having a letter of merit sent to your family					
Being allowed to proceed at own pace (not in formation) to and from classes					
Being able to drink soda (pop) or coffee in class					

Outcome	There is no chance that this outcome could be made dependent on effectiveness	There is a small chance that this outcome could be made dependent on effectiveness	Chances are 50-50 that this outcome could be made dependent on effectiveness	There is a strong chance that this outcome could be made dependent on effectiveness	It is certain that this outcome could be made dependent on effectiveness
Having a choice of where you will eat your meals					
Having your name and picture posted for your class achievement					
Talking over your strengths and weaknesses with your instructor					
Serving as a tutor in remedial instruction					
24-hour pass					
Taking a "field trip" to a place or other training course of interest					
Planning and attending a social event off base					
Having the identity of honor students passed to next duty instructor					
Having your accomplishment noted in your hometown newspaper					

Instructor Opinions About Training

Below are several statements relevant to an instructor's role in the technical training program. Indicate the extent to which you agree with each statement by checking one of the five spaces below each statement.

1. I feel free to teach my classes the way I want to teach them.

Strongly agree	Agree	Neutral; neither agree nor disagree	Disagree	Strongly Disagree

2. I am rewarded for a teaching job that I do well.

Strongly agree	Agree	Neutral; neither agree nor disagree	Disagree	Strongly Disagree

3. I get a good variety of activities in my instruction job.

Strongly agree	Agree	Neutral; neither agree nor disagree	Disagree	Strongly Disagree

4. The routine paperwork I have to do is excessive.

Strongly agree	Agree	Neutral; neither agree nor disagree	Disagree	Strongly Disagree

5. Offering incentives to trainees for doing well would be a good way to improve morale.

Strongly agree	Agree	Neutral; neither agree nor disagree	Disagree	Strongly Disagree

6. Offering incentives to trainees for doing well would be a good way to improve performance.

Strongly agree	Agree	Neutral, neither agree nor disagree	Disagree	Strongly Disagree

7. I do too much administrative work and not enough instruction.

Strongly agree	Agree	Neutral; neither agree nor disagree	Disagree	Strongly Disagree

8. I would like to spend extra time with slower students in remedial training.

Strongly agree	Agree	Neutral; neither agree nor disagree	Disagree	Strongly Disagree

9. It would be a good idea to have extra training time with the best students to give them extra advanced instruction they won't get in class.

Strongly agree	Agree	Neutral; neither agree nor disagree	Disagree	Strongly Disagree

10. I like to experiment with new approaches to instruction even though I may not be sure they will work out well.

Strongly agree	Agree	Neutral; neither agree nor disagree	Disagree	Strongly Disagree

11. Being a technical instructor is a difficult job.

Strongly agree	Agree	Neutral; neither agree nor disagree	Disagree	Strongly Disagree

12. Being a technical instructor is a satisfying job.

Strongly agree	Agree	Neutral; neither agree nor disagree	Disagree	Strongly Disagree

INSTRUCTOR OPINION QUESTIONNAIRE

On the following page is a list of items that may be used to describe your attitudes and opinions of specific behavior that you, an instructor, may exhibit in the training situation. You are to indicate how often you think you should engage in each of the behaviors listed. Read each item and circle the letter that best reflects your opinion. Decide whether you think you should (A) Always, (B) Often, (C) Occasionally, (D) Seldom, or (E) Never act as described by the item.

A=Always B=Often C=Occasionally D=Seldom E=Never

1. Put suggestions that are made by students into operation. . . . . .A B C D E
2. See to it that students are working up to their limits. . . . . .A B C D E
3. Make students feel at ease when talking with you. . . . . .A B C D E
4. Insist that students follow standard ways of doing things in every detail. . . . . .A B C D E
5. Be friendly and can be easily approached. . . . . .A B C D E
6. Emphasize meeting of deadlines. . . . . .A B C D E
7. Be willing to make changes. . . . . .A B C D E
8. Talk about how much should be done. . . . . .A B C D E
9. Stress the importance of high morale among students. . . . . .A B C D E
10. Criticize poor classwork. . . . . .A B C D E
11. Refuse to explain your actions. . . . . .A B C D E
12. Rule with an iron hand. . . . . .A B C D E
13. See that a student is rewarded for effective performance. . . . . .A B C D E
14. Insist that you be informed on decisions made by students. . . . . .A B C D E
15. Be easy to understand. . . . . .A B C D E
16. Emphasize the quantity of student accomplishments. . . . . .A B C D E
17. Express appreciation when a student performs well. . . . . .A B C D E
18. "Needle" students for greater effort. . . . . .A B C D E
19. Change students tasks without first talking it over with them. . . . A B C D E
20. Ask for sacrifices from students for good of entire class. . . . . A B C D E
21. Refuse to give in when students disagree with you. . . . . .A B C D E
22. Try out your new ideas. . . . . .A B C D E
23. Try to keep students in good standing with those in higher authority.A B C D E
24. Encourage overtime study. . . . . .A B C D E

This section asks for your opinions on the degree of attractiveness, to you, of several possible outcomes for participating in a training research project. Place an X in the column which best describes the attractiveness of each possible outcome or incentive to you. Indicate your own judgments of attractiveness, and do not skip any outcomes.

Outcome	Extremely Attractive	Very Attractive	Somewhat Attractive	Neither Attractive nor Unattractive	Somewhat Unattractive	Very Unattractive	Extremely Unattractive
Freedom from some squadron detail							
Time off (eg. pass)							
Freedom from some administrative duties							
Choice of teaching shift							
Ability to participate in a critique of the research project							
Certificate for participation							
Social event							
Freedom from policy changes during the project							
Name posted as participant in training research							
Participating in the decision to continue the new training system							

Outcome	Extremely Attractive	Very Attractive	Somewhat Attractive	Neither Attractive nor Unattractive	Somewhat Unattractive	Very Unattractive	Extremely Unattractive

Background Information: Technical Instructor

Finally, we would like some personal background information about you. Please answer each of the following questions. All information you have provided will be held in strict confidence. Only the Ohio State researchers will analyze the responses and no individual can be identified in statistical summaries presented in the research reports. Thank you for your cooperation in completing these questionnaires.

1. Your name_____

2. Your sex (Circle one) Male Female

3. Your age_____

4. Your race (Circle one) Black White Other (Please specify)_____

5. Status: Civilian____ If civilian, were you ever in the military____. If yes, were you a technical instructor_____
   If yes, what was your highest rank_____
   Military____ If military, what is your rank_____

6. How many years have you been in the Air Force?_____
   How many years have you been teaching?_____

7. What is your current specialty area in technical training?_____
   a. What is the course you are presently teaching?_____
   b. Block(s) presently teaching_____

8. What teaching specialty would you ideally like to be in?_____

9. What are other specialties you have taught?_____

10. What is your marital status? Single____Married____Divorced____Widowed_____

11. How many dependents (including self, wife, and children) do you have?_____

12. What is your previous education (check the highest level attained)
    Junior High School (grade 8)_____
    High School_____
    Some college_____
    College degree_____ In what field_____
    Graduate degree_____ In what field_____

APPENDIX J

INCENTIVES REJECTED FOR FURTHER ANALYSIS
IN SECOND SURVEY AT LOWRY AFB

Incentive	Reason for Rejection: Attractiveness	Instructor Feasibility	Researcher Feasibility	Redundancy
Eliminate involuntary cross-training		x	x	
Excused from classes based on exam		x	x	
Verbal praise			x	
Commendation letter				Certificate
Same-rank students in class	x	x	x	
Early assignment notification				Base choice
Party for top performers	x	x		Social event
Pass-fail grades	x	x	x	
Implementing suggestions			x	
Difficult challenging work				Advanced instruction
Explanation for orders			x	
Dorm choice			x	
Help instructor	x			Rope, class asst.
Not failing		x	x	
Teach a class	x	x		Help classmates learn
Opportunity to cross-train		x	x	
College credit			x	
Coed classes		x	x	
Self-pacing				(Function of course)
Interaction with instructor			x	Social interaction
Honor dorm	x	x	x	
Relax curfew	x	x		Time off, reduced detail
Pictures honor students	x	x		Pictures improved students
Display of work	x	x		
Special classroom seating	x	x	x	
Freedom from class exercises	x	x	x	Self-pacing
Evaluate own performance	x	x	x	
Choose roommates		x	x	
Set learning goals			x	
Group spokesman	x		x	

APPENDIX K

EXAMPLES OF LEADERSHIP BEHAVIOR INCIDENTS

What is Effective Leadership in the Classrocm?

The good classrocm leader may:

- o Show support of other people's behaviors.
- o Show concern and respect for the needs and feelings of others.
- o Treat people like individuals.
- o Help others solve problems.
- o Encourage others and praise their acccmplishments.
- o Initiate friendships with others.
- o Increase the "togetherness" and pride of the class.
- o Help others acccmplish training goals of the class.

To make this more specific, several examples are shown next. Your goal is to watch for instances of leadership like these.

Example 1.

Airman X realized that scme of the students could not keep up with the instructor--so he asked the instructor to go over the beginning of the block instead of going on to new material.

Example 2.

A group went down to the orderly rocm to give blood. One guy took charge and made a head count and controlled scme guys frcm screwing around by telling them that the sooner we got finished, the more free time we would have left.

Example 3.

Airman X had to work very hard to finish his projects before the end of the time scheduled for the block. Airman Y asked if he could help explain anything.

Example 4.

After trying for a long time to uncross scme of his wires, Airman X finally got his circuit to work. Airman Y told him that he was an O.K. dude for not quitting and for keeping his cool.

Example 5.

Airman X saw that Airman Y was having problems with the oscilloscope. Airman X showed him how to work it instead of criticizing him for what he did wrong. Airman X told him that he didn't mind helping because it takes time to get it together in electronics.

Example 6.

Airman X helped to increase the feeling of togetherness of the class by getting to know each and every member.

These examples illustrate some aspects of leadership in the classroom. Watch for these and more. You will be using the Classroom Leadership Recognition Form to nominate and recognize fellow classmates, and you will need to report specific examples of their leadership behavior.

The next page shows a sample of the Classroom Leadership Recognition Form. Read it carefully.

APPENDIX L

INSTRUCTOR ASSESSMENT OF STUDENT PERFORMANCE RATING FORM

Instructor's name:_____ Today's date:_____

Student being described:_____

Please consider this student relative to other trainees you have taught in this course and indicate how effectively he is performing by checking the appropriate space on the scale below each effectiveness item.

1. Showing initiative in the class

Very poor compared to other trainees	Worse than other trainees	Same as other trainees	Better than other trainees	Very good compared to other trainees

2. Knowledge of substantive material taught in the course

Very poor compared to other trainees	Worse than other trainees	Same as other trainees	Better than other trainees	Very good compared to other trainees

3. Communication skills

Very poor compared to other trainees	Worse than other trainees	Same as other trainees	Better than other trainees	Very good compared to other trainees

4. Getting along with classmates

Very poor compared to other trainees	Worse than other trainees	Same as other trainees	Better than other trainees	Very good compared to other trainees

5. Overall performance in the course

Very poor compared to other trainees	Worse than other trainees	Same as other trainees	Better than other trainees	Very good compared to other trainees

6. Exerting effort and applying himself to the training task

Very poor compared to other trainees	Worse than other trainees	Same as other trainees	Better than other trainees	Very good compared to other trainees

APPENDIX M

AIRMEN ATTITUDES TOWARD TRAINING RATING FORM

Please indicate how you currently feel about several aspects of your technical training. Below you will find several items that describe different components of your training experience. Indicate your present reaction to each component by checking, or placing an 'X', in one of the five spaces below the item; this will tell us how satisfied you are with each part.

1. Your Instructor in this course - Taking into account how effective a teacher he is and how he gets along with his students.

Very satisfied	Somewhat satisfied	Neutral	Somewhat dissatisfied	Very dissatisfied

2. The System of Rewards associated with being an effective student in this training program - Taking into account what rewards are available and what one must do to get them.

Very satisfied	Somewhat satisfied	Neutral	Somewhat dissatisfied	Very dissatisfied

3. Your Fellow Trainees in this training course - Taking into account how well other students make this class profitable for you, how well students get along with one another, and the general togetherness of your class as a group.

Very satisfied	Somewhat satisfied	Neutral	Somewhat dissatisfied	Very dissatisfied

4. The Content of this course - Taking into account the interest, importance, and challenge of the material required of you in the course.

Very satisfied	Somewhat satisfied	Neutral	Somewhat dissatisfied	Very dissatisfied

5. Your own Progress in the course - Taking into account how well you are doing in terms of performance and how quickly you are mastering the material.

Very satisfied	Somewhat satisfied	Neutral	Somewhat dissatisfied	Very dissatisfied

6. Your Overall satisfaction with this course - Taking into account generally all factors which are responsible for how satisfied you are.

Very satisfied	Somewhat satisfied	Neutral	Somewhat dissatisfied	Very dissatisfied

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